

**JANUARY**  
(JANUARY-FEBRUARY)  
**1945**

# CHEMICAL PREVIEW

**NEW**

- ★ PROCESSES
- ★ MATERIALS
- ★ MACHINERY
- ★ PRODUCTS
- ★ APPLICATIONS



Latest developments in chemical  
process manufacturing...for engi-  
neers, chemists and executives.



Precision parts being cleaned in acid bath while electrically charged. The tanks of specially treated glass are four times as strong as normal glass, resist temperature variations and do not corrode

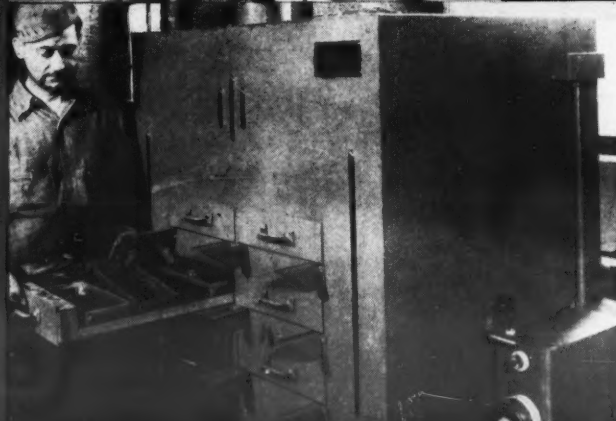


Funnel and graduates of transparent plastic; do not bend, corrode, shatter; ← quantity markings molded in

Intimate blending equipment for fine powders: insecticide dust blends of high uniformity and effectiveness →

Plastic pre-heat oven cuts molding time: air flows horizontally and is re-circulated; range to 500 °F ↓

Grinder has hydraulic controls, table, 37½ in. from floor, tilts 45° down, 15° up, lowers to 4 in. from disc bottom ↓



NDP

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CCA

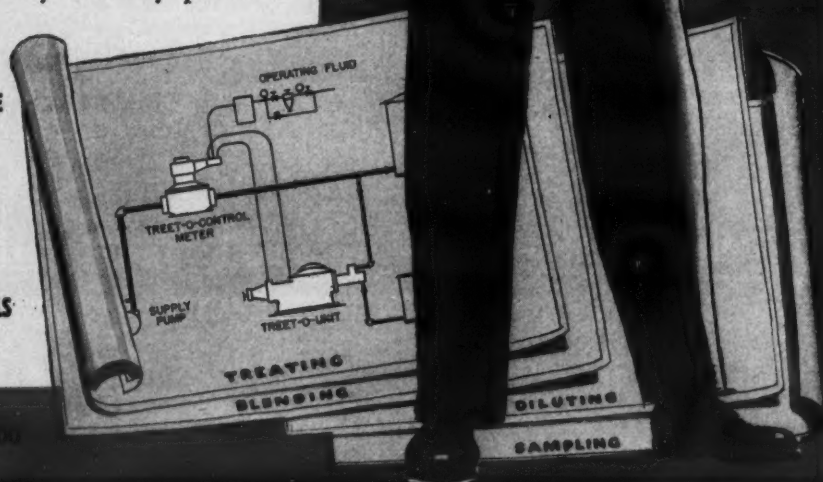
# Working

## PRINCIPLE

... AN *Idea*  
WITH ITS SLEEVES  
ROLLED UP!

The PRINCIPLE of continuous, automatic proportioning is WORKING in America's vital process industries. Thousands of %Proportioneers% installations, born as pilot plant ideas, are today proving this principle, bringing modern processing to streamline the production of many a timely product.

PENICILLIN  
AVIATION GASOLINE  
PLASTICS  
MINERAL OILS  
SYNTHETIC RUBBER  
PAINTS  
INSECTICIDES  
FOOD PRODUCTS OILS  
AND MANY OTHERS



# % PROPORTIONEERS, INC. %

WRITE TO %PROPORTIONEERS, INC.% AT GODDING ST. PROVIDENCE 1, RHODE ISLAND

## "That's Interesting"

### Why Mongols Always Felt At Home

The Mongols of central Asia more than qualify for that group who traditionally say "home wherever they hang up their hats". In fact, they go so far as to hang up the house itself. They have been doing so for more than a thousand years. These homes are made of thick felt, principally of wool. This coarse fiber is mounted on cylindrical-shaped frames of wood with conical roofs. (Felt Association, Inc.)

### Steel Collars

In Civil War days enameled steel collars which according to advertisements could be instantly cleaned by a slight rub with a wet cloth were in demand. Some sold for \$1 a piece. These collars enjoyed considerable popularity in the far West where laundry service was not available.

### Railroad Time

The standard requirements of railroads regarding the regulation of watches is that watches must not vary more than 30 seconds per week from perfect time. On most railroads watches must be submitted for comparison weekly, semi-monthly or monthly; and for inspection monthly, quarterly or semi-annually.

### Igloo Grain Bins

A new type grain storage bin is made by inflating a half balloon to a width of 29 ft. and a height of 14½ feet, then laying chicken wire over it and applying two layers of plaster over the wire. When the plaster has hardened the balloon is deflated and withdrawn for use in making more bins. (Domestic Commerce)

### Orange Seed Oil

A plant in Florida is extracting oil from orange seeds which provides a product that is suitable for flavoring and other applications. In Europe, oils have been produced from tomato and grape seeds and apricot kernel. Walnut and avocado oils are now being sold in this country.

### Transparent Films Protect War Products

The transparent packaging film — Saran Film — now being utilized for protecting war equipment and materials can be crumpled without cracking at — 40 degrees F., and extreme bursting pressure resistance withstanding ballooning effects of high altitudes.

### Airborne Beef

A city in South America which had for many years received its meat supply from herds driven through the mountain passes now has its meat flown in by planes from a slaughtering house built near an airfield.

### Distribution Takes 59% of Consumer's Dollar

"With greater efficiency increasing the output per production worker of almost three and one-half times in the last 60 years, while the output per distribution worker has remained practically constant it is no wonder that 59 percent of the consumer's dollar goes for distribution costs. Self-service in food stores, with greater sale per employee, appears to be one step toward lowering distribution costs and ultimately the price to the consumer." (E. I. du Pont de Nemours and Co. Bulletin)

(Continued on page 3)

For more information on product at left, specify CP A921  
... see information request  
blank between pages 2-3.



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## Check Below, For More Product Information

EVERY PRODUCT DESCRIBED IN THIS ISSUE IS LISTED BELOW . . . Check the items that interest you. Mail to publisher . . . Information comes to you direct, without obligation.

✓ Key	Product	✓ Key	Product	✓ Key	Product	✓ Key	Product
A921	Proportioning Pumps	A977	Coil Insulation	A1033	Liquid Cement	A1089	Steam-Jet Ejectors
A922	Rotary Vacuum Dryers	A978	Rotameters	A1034	Chemicals	A1090	Neoprene Gloves
A923	Stainless Steel Equipment	A979	Rheostats	A1035	Autoclave	A1091	Blowers & Exhaustors
A924	Stainless Steel Equipment	A980	Laboratory Furniture	A1036a	Cotton Duck	A1092	Welded quick opening door
A925	Recording Controllers	A981	Level Indicator	A1036b	Filter Fabrics	A1093	Fibre Drums
A926	Overhead Conveyors	A982	Electronic Liquid Control	A1037	Valves	A1094	Sub-zero Cabinets
A927	Mixing Units	A983	Water Controls	A1038	Scales	A1095	Fabric Lined Rubber Gloves
A928	Spout Type Magnets	A984	Drying Ovens	A1039	Fastenings	A1096	Steam Traps
A929	Filter Systems	A985	Micromanometer	A1040	RR Alundum	A1097	Transporter
A930	Carbon Black Latex System	A986	Thermometers	A1041	Dust Collectors	A1098	Plastic Pipe & Fittings
A931	Agitator Charts	A987	Electronic Tubes	A1042	Pumps	A1099	Truck Type Tray Dryers
A932	Step Valve Pumps	A988	Time Controls	A1043	Conduit Systems	A1100	Steam Jet Ejectors
A933	Processing Equipment	A989	Arc Spark Stand	A1044	Steam Traps	A1101	Stainless-clad Steel
A934	Non-Corrosive Flues	A990	Ratio Flow Control	A1045	Acetylene Generators	A1102	Air Motors
A935	Welding Alloys	A991	Control Valves	A1046	Pumps	A1103	Trucks & Trailers
A936	Lift Trucks	A992	Heating Units	A1047	Special Small Pumps	A1104	Jacketed Pipe & Fittings
A937	Car Spotters	A993	Temperature Controls	A1048	Test Instruments	A1105	Electric Furnaces
A938	Built-in Extinguishers	A994	Temperature Regulators	A1049	Hydraulic Lift Truck	A1106	Pneumatic Conveyors
A939	Compressors	A995	Pump Alternator	A1050	Dust Collectors	A1107a	Dust Collectors
A940	Stuffing Box	A996	Plastic Instrument Chart	A1051	Sectional Heat Exchangers	A1107b	Pneumatic Conveyors
A941	Industrial Trucks	A997	Air Velocity Meter	A1052	Hand Lift Trucks	A1108	Vibrating Screens
A942	Wire Mesh	A998	Conductivity Bridge	A1053	Gyrating Screens	A1109	Corrosion Resistant Alloys
A943	Fittings	A999	Instrument Maintenance	A1054	Vacuum Pumps	A1110	Vacuum Pumps
A944a	Heavy-duty Breakers	A1000	Tank Gauges	A1055	Plastic Pipe & Fittings	A1111	Blending Systems
A944b	Conveyors & Elevators	A1001	Solenoid Valves	A1056	Mixer	A1112	Flexible Molded Parts
A945	Flexible Couplings	A1002	Laboratory Pipe	A1057	Infrared Equipment	A1113	Foamglas Insulation
A946	Sanitizing Agent	A1003	Laboratory Furniture	A1058	Concrete Mixers	A1114	Magnetic Separators
A947	Mixers	A1004	DC Motor Analyzer	A1059	Metal Fabrication	A1115	Barrel Trucks
A948	Controllers	A1005	Temperature Controls	A1060	Lubricating Systems	A1116	Live Center
A949	Laboratory Furniture	A1006	Heat Exchangers	A1061	Vacuum Pumps	A1117	Dust Collectors
A950	Liquid Gauges	A1007	Electronic Controls	A1062	Power Transmission History	A1118	Electric Hoists
A951	Interval Timer	A1008	Voltage Regulator	A1063	Chain Hoists	A1119	Storage Bins
A952	Vacuum Gauges	A1009	Flow Indicators	A1064	Pipe Tools	A1120	Photocopy Machines
A953	Infrared Spectrophotometer	A1010	Mineral Medium	A1065	Safety Filling, Waste Cans	A1121	Stainless Steel Valves
A954	Pilot Relay	A1011	Resins Handbook	A1066	Fire Extinguishers	A1122	Wall Decks
A955	Plastic Funnels, Graduates	A1012a	Carbonic Gas	A1067	Unit Substations	A1123	Light Steel Structure
A956	Liquid Level Controls	A1012b	Dry Ice	A1068	Pumps	A1124	Respirators
A957	pH Meter	A1013	Anion Exchange Resins	A1069	Liquid Handling Equipment	A1125	Liquid Control Equipment
A958	Controllers	A1014	Chlorinating Agents	A1070	Tank Heads	A1126	Pumps
A959	Locker Room Thermometer	A1015	Plastic Foam	A1071	Materials Handling	A1127	Magnetic Equipment
A960	Flame-still	A1016	Santoite	A1072	Fluorescent Units	A1128	Screens
A961	Laboratory Equipment	A1017	Furfuryl Alcohol	A1073	Glass Tanks	A1129	Butterfly Valves
A962	Combustion Furnace	A1018	Plastic Cork Coating	A1074	Acid Zeolite Regeneration	A1130	Valve Packing Machines
A963	Hydrometers	A1019	Self-sticking Tape	A1075	Fuel Burning Systems	A1131	Lighting Equipment
A964	Enclosed Rotameter	A1020	Plastic Lead Compound	A1076	Auger Packers	A1132	Soy Bean Extraction
A965	X-Ray Spectrometer	A1021	Glycerine Uses	A1077	Rechargeable Batteries	A1133	Bin Level Controls
A966	Instrument Transformers	A1022	Self-sticking Tapes	A1078	Rolls	A1134	Pipe Wrench
A967	Instruments	A1023	Caulking & Caulking Gun	A1079	Ball & Rod Mills	A1135	Stainless Steel
A968	Gauges	A1024	Calcium Hypochlorite	A1080	Handling Buckets	A1136	Locker Insulation
A969	Electronic Controllers	A1025	Block Insulation	A1081	Industrial Trucks	A1137	Lathes
A970	Abraser	A1026	Polyhydric Alcohol	A1082	Lathe Chuck	A1138	Neoprene Gloves
A971	Multi-breakers	A1027	Colloidal Graphite	A1083	Pipeline Strainers	A1139	Pulverizers
A972	Laboratory Ovens	A1028	Protective Paint	A1084	Wire Cloth	A1140	Humidifiers
A973	Multi-contact Timer	A1029	Protective Creams	A1085	Manual on Belting	A1141	Power Drives
A974	Ferrous Metal Tester	A1030	Solvent 2 — 2 — 4	A1086	Cleaning Agent	A1142	Acid Handling Pumps
A975	Laboratory Furnace	A1031	Acetyl Benzoyl Peroxide	A1087	Synthetic Rubber Gloves	A1143	Auger Packer
A976	Reducing Valve	A1032	Rayon Glossary	A1088	Air Cleaner	A1144	Corrosion-resistant Floors

Mail to CHEMICAL PREVIEW, 737 N. Michigan Ave., Chicago 11, Illinois

MORE PRODUCT INFORMATION  
Check products which interest you, mail to us.

# If You Wish More Information On Products--

January-February, 1945

See Reverse Side of this Sheet — Be Sure To Give Your Address

(Listing of products continued)

✓ Key	Product	✓ Key	Product	✓ Key	Product	✓ Key	Product
<input type="checkbox"/>	A1145 Fork Trucks	<input type="checkbox"/>	A1189 Bag Closures	<input type="checkbox"/>	A1231 Relief Pop Valves	<input type="checkbox"/>	A1276 Valves
<input type="checkbox"/>	A1146 Worm Gear Speed Reducers	<input type="checkbox"/>	A1190 Test Clamps	<input type="checkbox"/>	A1232 Floor Boxes	<input type="checkbox"/>	A1277 Mixing Type Kettles
<input type="checkbox"/>	A1147 Masonry Saws	<input type="checkbox"/>	A1191 Protectors for Fittings	<input type="checkbox"/>	A1233 Electric Timers	<input type="checkbox"/>	A1278 Protective Hand Soap
<input type="checkbox"/>	A1148 Diesel Engines	<input type="checkbox"/>	A1192 Metallic Packings	<input type="checkbox"/>	A1234 Aluminum Equipment	<input type="checkbox"/>	A1279 Safety Valves
<input type="checkbox"/>	A1149 Vacuum Pumps	<input type="checkbox"/>	A1193 Laminating Equipment	<input type="checkbox"/>	A1235 Sheet Machine	<input type="checkbox"/>	A1280 Instruments
<input type="checkbox"/>	A1150 Pipe Joint Compound	<input type="checkbox"/>	A1194 Cooling Towers	<input type="checkbox"/>	A1236 Portable Conveyors	<input type="checkbox"/>	A1281 Portable Pressure Units
<input type="checkbox"/>	A1151 Reducer, Worm Gear	<input type="checkbox"/>	A1195 Testmasters	<input type="checkbox"/>	A1237 Screw Conveyors	<input type="checkbox"/>	A1282 Chemical Feeders
<input type="checkbox"/>	A1152 Shut-off Valves	<input type="checkbox"/>	A1196 Drains	<input type="checkbox"/>	A1238 Fire Extinguishers	<input type="checkbox"/>	A1283 Filter Presses
<input type="checkbox"/>	A1153 Liquid Strainers	<input type="checkbox"/>	A1198 Heat Reclaim System	<input type="checkbox"/>	A1239 Stainless Steel Header	<input type="checkbox"/>	A1284 Vertical Conveyors
<input type="checkbox"/>	A1154 Stainless Steel Castings	<input type="checkbox"/>	A1197 Glass Filter Mediums	<input type="checkbox"/>	A1240 Conveyors	<input type="checkbox"/>	A1285 Mixers
<input type="checkbox"/>	A1155 Humidity Controls	<input type="checkbox"/>	A1198 Spray Nozzles	<input type="checkbox"/>	A1241 Face Shields	<input type="checkbox"/>	A1286 Rotary Dryers
<input type="checkbox"/>	A1156 Weighing Feeders	<input type="checkbox"/>	A1199 Instant Water Heater	<input type="checkbox"/>	A1242 Steam Generators	<input type="checkbox"/>	A1287 Grating
<input type="checkbox"/>	A1157 Glass Tanks	<input type="checkbox"/>	A1200 Air Separator	<input type="checkbox"/>	A1243 Industrial Ovens	<input type="checkbox"/>	A1288 Preheat Ovens
<input type="checkbox"/>	A1158 Lighting Equipment	<input type="checkbox"/>	A1201 Small Capacity Pumps	<input type="checkbox"/>	A1244 Dust Collectors	<input type="checkbox"/>	A1289 Pumps
<input type="checkbox"/>	A1159 Corrosion-resistant Equipment	<input type="checkbox"/>	A1202 Manganese Steel Fitted Pumps	<input type="checkbox"/>	A1245 Bearing Cleaning Machine	<input type="checkbox"/>	A1290 Telephone Booths
<input type="checkbox"/>	A1160 Screenless Pulverizers	<input type="checkbox"/>	A1203 Pipe Cutter	<input type="checkbox"/>	A1246 Dewatering Press	<input type="checkbox"/>	A1291 Steam Turbines
<input type="checkbox"/>	A1161 Radio Speaker	<input type="checkbox"/>	A1204 Disc Grinder	<input type="checkbox"/>	A1247 Steam Traps	<input type="checkbox"/>	A1292 Piping Pointers Manual
<input type="checkbox"/>	A1162 Acid Handling Pumps	<input type="checkbox"/>	A1205 Chemical Porcelain	<input type="checkbox"/>	A1248 Corrosion-proof Paint	<input type="checkbox"/>	A1293 Thermostats
<input type="checkbox"/>	A1163 Filters	<input type="checkbox"/>	A1206 Plastic Pumps	<input type="checkbox"/>	A1249 Vibrating Screens	<input type="checkbox"/>	A1294 Power Shovels
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<input type="checkbox"/>	A1165 Crane Truck	<input type="checkbox"/>	A1208 Heat Transfer Data	<input type="checkbox"/>	A1251 Coupling for Plastic Tubing	<input type="checkbox"/>	A1296 Filter Press Closers
<input type="checkbox"/>	A1166 Glass Piping	<input type="checkbox"/>	A1209 Flexible Metallic Packing	<input type="checkbox"/>	A1252 Bottle Labeling	<input type="checkbox"/>	A1297 Boreoscopes
<input type="checkbox"/>	A1167 Flexible Metal Hose	<input type="checkbox"/>	A1210 Dust Collector	<input type="checkbox"/>	A1253 Eye & Face Shields	<input type="checkbox"/>	A1298 Resin Calicids
<input type="checkbox"/>	A1168 Valves	<input type="checkbox"/>	A1211 Conveyors	<input type="checkbox"/>	A1254 Handling Equipment	<input type="checkbox"/>	A1299 Protective Clothing
<input type="checkbox"/>	A1169 "Beanie" Caps	<input type="checkbox"/>	A1212 De-ionizing Equipment	<input type="checkbox"/>	A1255 Welded Products	<input type="checkbox"/>	A1300 Pump
<input type="checkbox"/>	A1170 Processing Equipment	<input type="checkbox"/>	A1213 Vacuum Pumps	<input type="checkbox"/>	A1256 Pillow Blocks	<input type="checkbox"/>	A1301 Rectifiers
<input type="checkbox"/>	A1171 Infrared Equipment	<input type="checkbox"/>	A1214 Laboratory Cabinets	<input type="checkbox"/>	A1257 Adhesive	<input type="checkbox"/>	A1302 Moisture Detector
<input type="checkbox"/>	A1172 Steam Traps	<input type="checkbox"/>	A1215 Proportioning Valve & Positioner	<input type="checkbox"/>	A1258 Barrel Trucks	<input type="checkbox"/>	A1303 Electronics Guide Book
<input type="checkbox"/>	A1173 Immersion Heaters	<input type="checkbox"/>	A1216 Chlorine Dioxide	<input type="checkbox"/>	A1259 Filters	<input type="checkbox"/>	A1304 Centrifugals
<input type="checkbox"/>	A1174 Dust Collectors	<input type="checkbox"/>	A1217 Water Heater	<input type="checkbox"/>	A1260 Moveable Sacking Scale	<input type="checkbox"/>	A1305 Conveyor-Elevators
<input type="checkbox"/>	A1175 Gate Valves	<input type="checkbox"/>	A1218 Hand Trucks	<input type="checkbox"/>	A1261 Compressed Air Separator	<input type="checkbox"/>	A1306 Overhead Handling
<input type="checkbox"/>	A1176 Chemical Porcelain	<input type="checkbox"/>	A1219 V-Belts	<input type="checkbox"/>	A1262 Protective Hoods	<input type="checkbox"/>	A1307 Ethanolamines
<input type="checkbox"/>	A1177 Synthetic Lining	<input type="checkbox"/>	A1220 Colloid Mills	<input type="checkbox"/>	A1263 Counting Scales	<input type="checkbox"/>	A1308 Processing Equipment
<input type="checkbox"/>	A1178 Propellers	<input type="checkbox"/>	A1221 Oil Tank Foam Chamber	<input type="checkbox"/>	A1264 Line Mixer	<input type="checkbox"/>	A1309 Liquid Batching Systems
<input type="checkbox"/>	A1179 Centrifugal Pumps	<input type="checkbox"/>	A1222 Water Still	<input type="checkbox"/>	A1265 Slurry Pumps	<input type="checkbox"/>	A1310 Swivel Joints
<input type="checkbox"/>	A1180 Compressed Air Dryers	<input type="checkbox"/>	A1223 Electronic Level Control	<input type="checkbox"/>	A1266 Pumps	<input type="checkbox"/>	A1311 Concrete Mixers
<input type="checkbox"/>	A1181 Respirators	<input type="checkbox"/>	A1224 Laboratory Glassware	<input type="checkbox"/>	A1267 Steel Grating	<input type="checkbox"/>	A1312 Waterfog Sprinkler
<input type="checkbox"/>	A1182 Ammonia-refrigeration data	<input type="checkbox"/>	A1225 Starches	<input type="checkbox"/>	A1268 Metal Stampings	<input type="checkbox"/>	A1313 Centrifugals
<input type="checkbox"/>	A1183 Vacuum Coating Unit	<input type="checkbox"/>	A1226 Conveyor Belting	<input type="checkbox"/>	A1269 Industrial Trucks	<input type="checkbox"/>	A1314 Safety Interlocks
<input type="checkbox"/>	A1184 Pressure Reducing Valve	<input type="checkbox"/>	A1227 Wash Room & Plant Sanitation	<input type="checkbox"/>	A1270 Copper Brazing	<input type="checkbox"/>	A1315 Magnetic Filters
<input type="checkbox"/>	A1185 Carton Stitchers	<input type="checkbox"/>	A1228 Filter Stations	<input type="checkbox"/>	A1271 Conveyors	<input type="checkbox"/>	A1316 Floor Patch
<input type="checkbox"/>	A1186 Adjustable Drives	<input type="checkbox"/>	A1229 Scales	<input type="checkbox"/>	A1272 Autoclaves	<input type="checkbox"/>	A1317 Steel Shapping
<input type="checkbox"/>	A1187 Tube Cleaners & Expanders	<input type="checkbox"/>	A1230 Kettle	<input type="checkbox"/>	A1273 Industrial Ovens	<input type="checkbox"/>	A1318 Bag Closer
<input type="checkbox"/>	A1188 Rotary Pumps			<input type="checkbox"/>	A1274 Filter	<input type="checkbox"/>	4th
				<input type="checkbox"/>	A1275 Red Toners	<input type="checkbox"/>	Covey Chemical Porcelain

Please send information requested to:

Name ..... Title .....  
 Firm ..... (Please give the firm name)  
 Street Address .....  
 City and State ..... (Please Give Postal Zone Number)

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glass tanks like those being used in installation to be in illustration (top) combine the advantage of strength with being impervious to acids, chemicals, alkalis. Their availability has made them valuable in instances where other tank materials of a critical nature were difficult to obtain. The transparent tanks, included in this selection, are used in some applications where vision of the material desired. See page 62.

Produced by injection molding of transparent plastic, the funnels and graduates illustrated in the picture (left center) are not only non-shatterable and light weight but their molded-in-markings are permanent. Moderate in price they are used for handling liquid, dry chemicals and are serving in laboratory and plant in processing plants, bottling works and pharmaceutical houses. See page 15.

The effectiveness of products involving the combination of fine powders such as insecticides is greatly increased by precise and thorough blending now afforded to an unusually high degree by the assembled units shown in photo at the right center. Systems like this are being used with highly satisfactory results on mixtures of finer than 100 mesh. See page 52.

Forced convection system — heat distribution and circulation provides smoothly controlled horizontal flow of air throughout the oven shown lower left. For heating, drying, baking and testing in plant and laboratory. See page 92.

The all purpose disc grinder shown (bottom center) is made in regular model using cloth or paper discs and heavy duty type with disc 1 in. thick. Used on metal, wood, plastic materials. See page 74.



### How To Use This Issue

If you are particularly interested in a specific type of product, turn first to the Directory of All Products in This Issue on pgs. 99-100. Here is an alphabetical listing of every product, whether it is featured editorially or in the advertising.

Then, to make sure you keep abreast of latest developments, perhaps something you have heard nothing about, you'll want to browse through the rest of the pages.

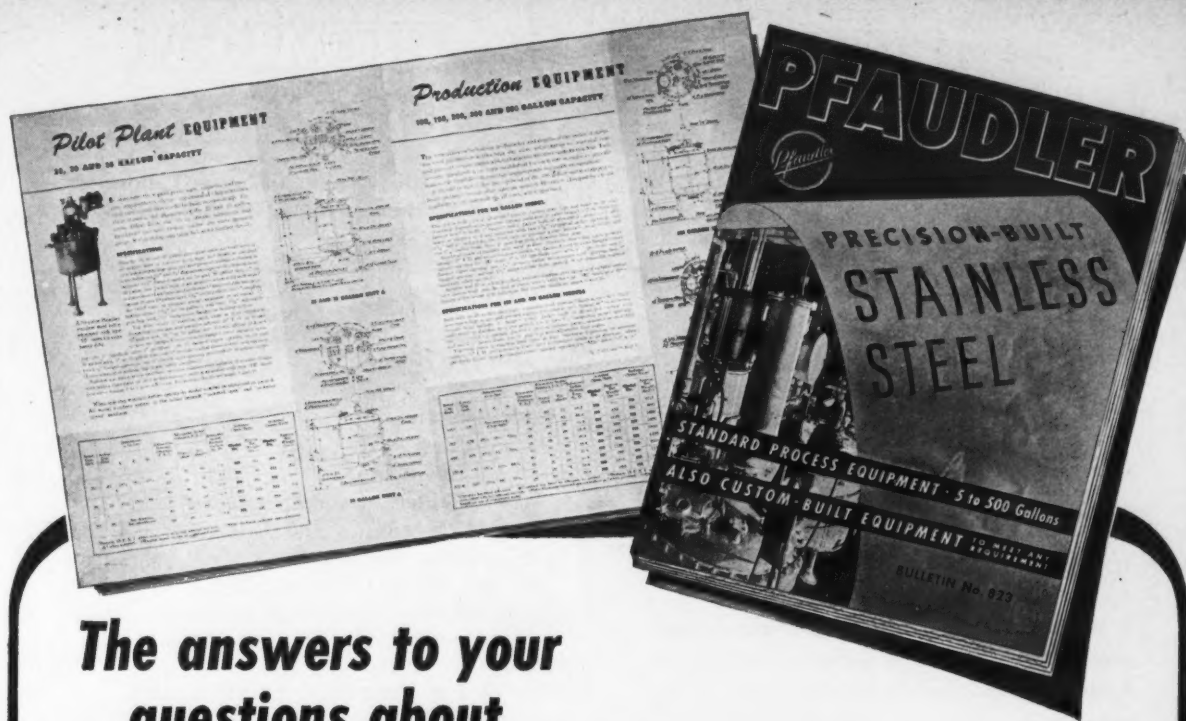
The Editors have searched far and wide to bring you this comprehensive Preview of product developments of help to you in your chemical processing work. Thus, they save you time, enable you to keep posted with a minimum of effort. When you find an item that interests you particularly, and you'd like more information on it, use the handy information request slip between pages 2 and 3. Just check the item that interests you, fill in your name and address and send this slip to the publishers. The information will come to you promptly.

And don't forget . . . when you have finished this issue, pass it on to your associates as they'll be interested, too.

### How To Get This Magazine Regularly

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You can receive it free of charge simply by sending your request to the publishers on your company letterhead and telling them of your connection in your chemical processing plant, if you are a chemist, engineer or executive. Your request subscription will start soon thereafter. There is no charge or obligation for this service.



## The answers to your questions about

## PFAUDLER STAINLESS STEEL EQUIPMENT

### Send for your copy of the new Pfaudler Bulletin

Our new Bulletin No. 823, "Pfaudler Precision-Built Stainless Steel" contains much information helpful to chemists, engineers and production men who are engaged in processing operations.

In it you will find a short guide to the characteristics of different stainless steels and the duties for which they are best fitted. Comprehensive specifications of Pfaudler Stainless Steel laboratory, pilot plant and production equipment are included with details about important ac-

cessories, drives, agitators, stuffing boxes, baffles, tubular condensers and other standard Pfaudler equipment.

Also illustrated is some of the specially designed, special purpose custom-built stainless steel equipment Pfaudler has engineered and built. Regardless of your problem or equipment needs, Pfaudler engineering "know how" and facilities can mean much to you.

For a copy of this bulletin or further information on your particular requirements, write The Pfaudler Company, Rochester 4, N. Y.



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THE PFAUDLER CO.  
Rochester 4, New York  
PLEASE SEND ME STAINLESS STEEL BULLETIN No. 823

Name \_\_\_\_\_  
Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_

When inquiring specify CP A923 . . . see information request blank, pgs. 2-3



The stainless steel or alloy you select for your processing equipment is corrosion resistant. But between the mill and the finished vessel, during fabrication, the corrosion resistance and strength inherent in the original alloy sheet may be seriously impaired.

The length of time your equipment resists the corrosive influences involved in your application depends on your fabricator. He must know the alloys—know their behavior during manufacture. He must have men who are trained to guard corrosion resistance to the greatest possible degree whether in the welding, forming or finishing of your vessel.

Retaining corrosion resistance requires skill and long experience. S. Blickman, Inc. has specialized for years in fabricating processing equipment of stainless steel and other corrosion resistant alloys. We have established production techniques and factory controls—checked by engineers and aided by specialized machinery—to guard alloys in fabrication. Before selecting a fabricator for your new processing equipment, consult with us.

S. Blickman, Inc., 701 Gregory Ave., Weehawken, New Jersey

**S. BLICKMAN, INC.**  
Guards Alloys in Fabrication

A request on your letterhead will bring our guide, "What to Look For When You Specify Stainless Steel for Your Processing Equipment."

**CORROSION RESISTANT PROCESSING EQUIPMENT**

TANKS • KETTLES • STILL • HEAT EXCHANGERS • AGITATORS • MIXERS • TOWERS • PIPING

When inquiring specify CP A924 — see information request blank, pgs. 2-3

# CHEMICAL PREVIEW

Edited for Production and Laboratory  
Men in the Chemical Process Industries

VOLUME 8

NUMBER 1

January-February, 1945

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## 25,000 Circulation in These Chemical Process Plants

Brewers, Distillers	Fertilizers	Petroleum Refining
Cellulose	Food Products	Plastics
Cement, Lime	Leather	Rubber
Ceramics	Metallurgical	Soap
Chemicals	Paints, Varnishes	.. & allied lines
Drugs, Cosmetics	Paper, Pulp	

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Micromax Controls on six streams of technical fluid being refrigerated at the Hoffmann-LaRoche plant in Nutley, N. J.

## Refrigeration Controlled to 1/4 Degree

For close and dependable control of their modern and carefully engineered refrigerating processes, Hoffmann-LaRoche uses Micromax Recording Controller.

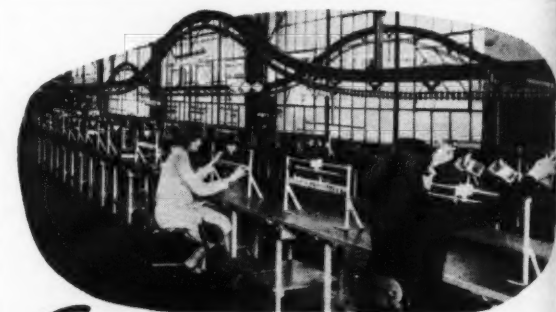
With this setup, temperature is held almost absolutely uniform within a band of one-half degree C; it is recorded in detail on large charts.

If you have a similar temperature control problem, an L&N engineer will be glad to talk to you, or send a Catalog, as you prefer.

**LEEDS & NORTHRUP**  
MEASURING INSTRUMENTS • TELEMETERS • AUTOMATIC CONTROLS • HEAT-TREATING FURNACES

Jrl Ad N-33C-706(2a)

When inquiring specify CP A925 — see information request blank, pgs. 2-3



## A More Efficient Way to Handle Your Products

THIS ALVEY-FERGUSON Overhead Conveyor System in one of the largest pharmaceutical manufacturing plants is shown delivering materials in an "endless stream" to the operators in the line. This installation doubled production, cut handling costs and kept aisles clear. Now, before your postwar competition starts, is the time to talk to A-F Conveyor Engineers about your problems in handling materials and packages. Write today.

**THE ALVEY-FERGUSON CO.**  
12 Disney Street, Cincinnati 9, Ohio

**CONVEYING EQUIPMENT**  
**Alvey-Ferguson**  
METAL PRODUCTS, CLEANING & FINISHING EQUIPMENT

When inquiring specify CP A926 — see information request blank, pgs. 2-3



## "That's Interesting"

### Reduction In Amount of Active Solvents Required In Lacquer Formulation

Reduction in the amount of active solvents required in the formulation of lacquers was recently announced by Hercules Powder Co. It is attained through improvement in solubility of RS types of nitrocellulose up to and including 60-80 second viscosity type and does not effect the quality of nitrocellulose lacquers. In some cases reduction as high as twenty-five percent total active solvents can be made. It is believed this may assist lacquer makers in expanding finishes markets.

### Metal Plating On Glass For Solder Seal

Electro-plastic process in plating on plastic materials is being further adapted for application to glass and ceramics. Tests on Pyrex glass have been conducted by heating the solder sealed piece to 350° F. and immersing it immediately into dry air, showing adaptability to wide temperature range. Good adhesion is attained. Hot iron, oven or electronic soldering satisfactory, no special solders required. Adaptable to hermetic sealing of electrical components. (Electro-Plastic Processes, Chicago.)

### Exploratory Well Reaches Depth of 15,843 Feet

The Standard Oil Company (California) broke world record for depth in exploratory well near Taft, Cal. in October. At that date drilling had reached a depth of 15,483 feet. Size of drill pipe at that depth is 3½ inches. Temperature at bottom estimated at 300-400° F. (Nordstrom Flow Line)

### Apparatus Removes "Free Moisture" From Flour Without Damaging Other Ingredients

The War Food Administration reports that Alfred Christie, chief of the testing section, has invented an apparatus which, in making moisture test, will "completely remove all free moisture from flour cereal products and like materials without damaging the ingredients. The apparatus uses high frequency electric current and makes it possible to remove varying amounts of moisture simultaneously from several samples of material. As the sample is immediately cool enough for weighing the test is completed with a minimum of waiting. The inventor has assigned the patent to the Secretary of Agriculture.

### On Wings of Magnesium

Airplane wings fabricated entirely of magnesium have been in flight for more than a year it has recently been revealed. Since magnesium is one third lighter than aluminum this weight saving could be an important factor as it is estimated that savings of a single pound is worth \$100 a year on a commercial plane. (Dow Chemical Co. Bulletin)

### Survey of California Minerals

A questionnaire to chemical plants in Southern California asking for lists of Chemical products now being manufactured, minerals used for the operation, proportion of local minerals employed. It is expected that data will bring additional industries for which adequate mineral sources are available.

### Extraction of Resin-Rubber Gum from Milkweed In Canada

Laboratory and pilot plant extraction of Resin-Rubber Gum from Milkweed has been carried on by National Research Council of Canada, Ottawa, Canada. Extraction studies have dealt with leaf tissue. The unit processes in the plant consist of cooking, filtering, washing, pebble milling, floating, thickening, agglomerating and drying. (Laboratory extraction yielded a soft, tacky material containing 25-40% rubber hydrocarbon (benzene solubles), 35-40% resin (acetone solubles) and concentrate has always been lower than that of the tails. An interesting fact is that the degradation products of the chlorophyll in the leaves are concentrated along with the resin rubber. Therefore an operator can by comparing the color of concentrate and tails, obtain a rough idea of the concentration effected without having to wait for an analysis. (Denver Equipment Bulletin F10-B21)

(Continued on page 103)

**Another PORTER Service**

**Fit the Stirrer to the Job!**

Prompt delivery of propellers, paddles, turbines, and special chemical-plant castings in stainless alloy, and carbon steels, and gray iron.

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When inquiring specify CP A927 . . . see information request blank, pgs. 2-3



**NIAGARA PERMAFLUX** spout type magnets are built of Alnico, the strongest magnetic alloy known. Their exclusive "double gap" construction with recessed surface insures effective removal of magnetic impurities from a wide variety of products. Because they require no electrical current and have no moving parts to wear out they furnish dependable and economical protection.

Write today for descriptive literature.

**RICHMOND MFG. CO.**  
LOCKPORT, N. Y.

When inquiring specify CP A928 — see information request blank, pgs. 2-3

## PROBLEM: "These vials must be *absolutely CLEAR*"



**NIAGARA FILTER** engineers were called in to clarify **CELLULOSE ACETATE** solution . . . which had never before been properly clarified!

### The Factors:

A prominent Eastern manufacturer of clear plastic vials had the problem of removing undissolved linters and haze from his Cellulose Acetate solution. They had never been able to successfully clarify this material by various methods. The final product was always unsatisfactory. The results were like a primary straining operation, in which the final moulded plastic was slightly hazy, and stray linters were always apparent.

NIAGARA FILTER chemical engineers were called. After careful study in the field and laboratory, a NIAGARA FILTER System was designed to satisfy the requirements of this unusual job:

### The Solution:

1. All undissolved linters and haze were removed from the Cellulose Acetate solution.
2. The filtration operation was made foolproof.
3. The NIAGARA equipment was designed to be simply operated.
4. The method of cake removal was reduced to a very simple proposition.
5. A standard uniform product of high clarity was produced continuously.

The Cellulose Acetate solution is handled in batches of 2500 gallons per day, and a flow rate of 300 gallons per hour, on a solution having a viscosity of 5600 centipoises. Final plastic remaining in the tank at the end of the cycle is pumped back to the dissolving tanks in the piping hook-up provided. The cake is then extracted with solvent to recover the Cellulose Acetate.

This problem is being accomplished with a No. 200 NIAGARA FILTER station, using Stainless Steel Style "C" cloth-bag-covered-leaves with the assistance of filter-aid. The system is equipped with a small air-tight mix tank for suspending filter-aid for precoat on recirculation, in which operation the filter-aid is deposited on the Style "C" leaves to provide initial clarity. This tank is hand-agitated to suspend the filter-aid, eliminating explosion proof motor and controls.

Even though your product may not be so difficult to handle, you are invited to consult with NIAGARA's staff of filtration experts WITHOUT ANY OBLIGATION. WATCH FOR other case histories of how Niagara Filter systems solve chemical problems . . . Write us for descriptive literature.



**niagara filter CORPORATION**  
3090 MAIN STREET AMherst 1510 BUFFALO 14, N. Y.

**FILTRATION ENGINEERS TO THE PROCESSING INDUSTRIES**

When inquiring specify CP A929 . . . see information request blank, pgs. 2-3

## New Solutions of Plant Problems

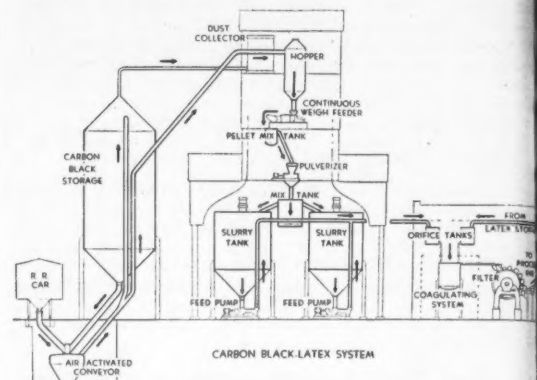
The solutions here given are selected because of their ideas in the application of available equipment or materials to overcoming certain tough plant problems. Many of these suggest basic ideas applicable in kindred or very different problems of process production.

### Perfect Method of Mixing Carbon Black & Latex; 1/3 Time Saved

*Newly designed plants speed transfer of carbon black from cars to actual process of mixing with the latex*

**Problem** — Mixing of carbon black with liquid rubber has at last been achieved in rubber industry after many years of effort along this line. After scientists had successfully mixed carbon black with the liquid latex in the laboratory a second problem was the quickest possible completion of blueprints and start of construction of this plant for General Tire & Rubber Co.

**Solution** — Engineers of equipment and plant construction organization completed blue prints in 10 days and construction was begun. Drawing illustrated sequence of operations now carried out in this plant. The carbon black is delivered in railroad car on the left, taken by air activated conveyor into storage room and sent as needed, on to the hopper, upper center. The arrows show the course of the carbon black until it is pumped into the main synthetic rubber plant for mixture with the latex before the rubber coagulates into a solid or plastic form. Previously



FLOW SHEET OF CARBON BLACK-LATEX SYSTEM

the mixing was done after the rubber had solidified. Several weeks after construction began the first rubber was turned out.

**Results** — Elimination of the dirtiest part of rubber compounding. Milling time cut by one third, substantial savings in power. (Information on plant construction request.)

BLAW-KNOX Div. of Blaw-Knox, Dept. CP, Farmer Bank Bldg., Pittsburgh, Pa.

When inquiring specify CP A930 — see information request blank, pgs. 2-3

### Charts Provide Practical Guide For Impeller, Baffle Selection

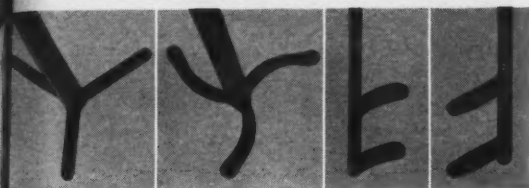
*Comprise scales of agitative possibilities and agitative intensities for guide in proper relation of agitator design, size and speed to the job*

**Problem** — Difficulties have been encountered in determining agitator design because of meager data and lack of usable formula.

**Solution** — Manufacture of glass lined processing equipment (including glass covered impellers and adjustable baffles) has translated findings of investigation to two charts for reference to guide selections for proper relation of agitator and baffle design, size and speed for the service involved. (These apply only to the maker's impellers and baffles). The standard agitators — straight blade and retreating curved blade impeller are shown in the accompanying illustration. The latter is more universal because it handles more viscous solutions without excessive power rise. No critical speed has been found and this is attributed to the fact that the three blade design allowed free access of liquids to the "eye" of the impeller and that the range of modern agitation is almost entirely in the turbulent range. Upward and downward deflecting baffles are also shown here. Various combinations are possible. The first of the charts referred to provides a scale of the "agitative possibilities" of impeller agitators. This agitative possibility would be directly transposable to the power expended in the rotary motion of the fluid were converted to resistance. In taking into account the effect of the batch size, experiments led to using a simple linear relation "agitative possibility." This is called "agitative intensity." "Agitative



## New Solutions



PELLERS, straight and retreating; BAFFLES, upward deflecting and downward deflecting

intensity" is the "Agitative Possibility" per unit volume and has proved an excellent criteria for comparing the agitation obtained in various systems. This formula was checked against successful applications of agitation and a workable guide was found. The results fell into a definite pattern ranging from cooling to gas absorption without a dip pipe line and a table of agitative intensities was set up and incorporated in the second of these charts.

**Problem** — An example that serves as an illustration is case of a hydrogenation of a pharmaceutical material carried out without a dip pipe or diffuser in a 100 gallon unit with approximately 90 gallons of batch, using an upward deflecting baffle and a 24 in. straight blade agitator at 175 rpm corresponding to an agitative intensity of 22. A similar reaction was carried out in a 300 gallon unit using 220 gallons of batch with the same size agitator. 235 rpm was necessary to approximate the same reaction rate and the intensity was checked at 21.8. This latter reaction was carried out in a 400 gallon unit with approximately 300 gallons of batch. A 36 inch leading curved blade agitator had been planned for the larger unit but through an error a 30 inch agitator was supplied at 150 rpm. This gave an intensity of 20 but since the tank was somewhat deeper, the reaction rate was observed to be about half as great in the 300 gallon unit. A 36 inch retreating blade agitator later supplied for 150 rpm.

**Results** — The 36 inch agitator gave intensity of 30.8 and the absorption rate again returned to the level previously obtained. The hydrogenation time is now less than 1/3 that which had been planned previously.

**Description** — In the charts ranges are given for each general operation. The system proposed does not claim to eliminate factor of judgment but is intended only as a guide in the proper relation of agitator design, size, speed to the job required. In regard to power requirements, when data are available on a successful application of one size, the power requirements of similar systems of other sizes can be estimated as proportionate to the "agitative possibilities." The chart is helpful in interpreting pilot plant data into design for full scale plant equipment. This guide has also proved of great value in ascertaining whether agitation is being applied. Information concerning this proper intensity of agitation is being applied.

THE PFAUDLER CO., Dept. CP, Rochester 4, N. Y.

When inquiring specify CP A931 — see information request blank, pgs. 2-3

### Do You Have a New Solution?

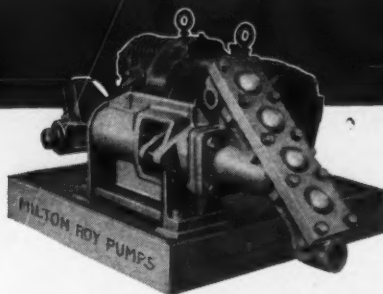
Has a recent use of your equipment solved a difficult chemical plant problem? The equipment may be new or from your standard line. For publication, data should state definitely (1) Nature of operation in question, i.e., cooking, cooling, mixing; (2) Difficulties involved such as control of temperature, product uniformity, lubrication or cleaning; (3) How was equipment used — in standard or modified form? (4) Results, facts on savings in time, labor, increased production or similar cost factors or extent of product improvement. Address the Editors.

CHEMICAL PREVIEW

737 N. Michigan

Chicago 11, Ill.

## MILTON Roy Step-Valve PUMPS

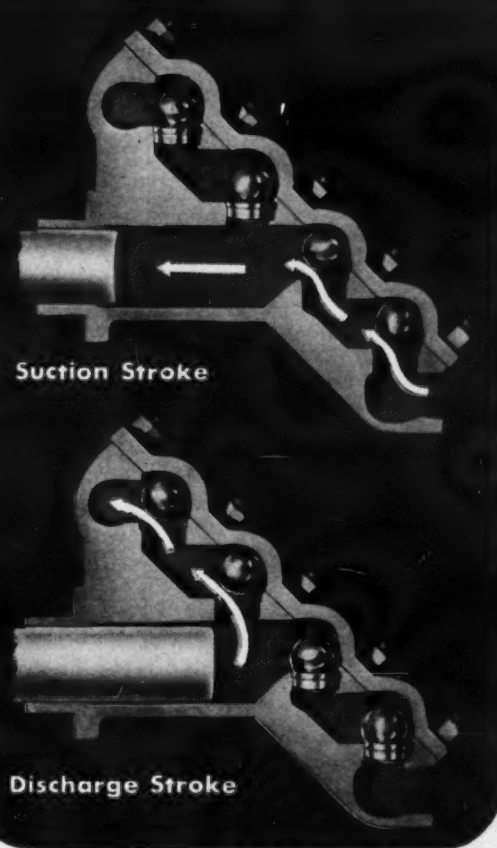


### Particularly Well Adapted for Handling

- Viscous Materials
- Crystals or Fibres in Suspension
- Slurries
- Food Products

Note how the double-ball checks in this Milton Roy Step-Valve climb high out of their seats . . . how the flow of the pumped liquid is in an almost straight line under, not around, the ball checks.

This streamlined flow has a self-cleaning action. Flow resistance and slippage are minimized. High and reproducible volumetric efficiencies are assured. An exact volume of liquid is pumped at each and every stroke of the plunger. Note also that the discharge of air or gas from this valve must be instant and complete . . . air pocketing is impossible. Also that even if the first ball-check may be temporarily held off its seat the second check must continue to function . . . thus eliminating "orifice action" and wire-drawing. Note, too, how readily accessible the entire interior of this Step-Valve is, simply by the removal of the single cover plate and without disturbing intake or discharge piping.



The above advantages are basic, exclusive with Milton Roy Step-Valve design. They make it possible for these pumps to handle extremely viscous materials, tars and asphalts textile fibres in suspension, acid sludges, etc. For handling such materials against negative differential pressures outside spring-loading is available.

Milton Roy Pumps are available in all metals that can be cast or machined, also in transparent plastics; for practically all chemical services; for pressures up to 20 thousand pounds; in capacities up to 1300 gph (Simplex) and 2600 gph (Duplex). More details on request.

## MILTON Roy PUMPS



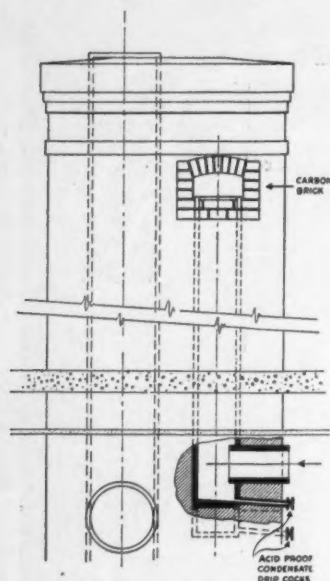
1310 E. Mermaid Ave., Chestnut Hill - Philadelphia, 18, Pa.

When inquiring specify CP A932 . . . see information request blank, pgs. 2-3

## New Solutions

### Carbon Flues Make Laboratory Fume Line Corrosion-Proof

*Two lines installed in regular brick chimney running through center of building separate explosive gas combinations*



DRAWING . . showing carbon structure

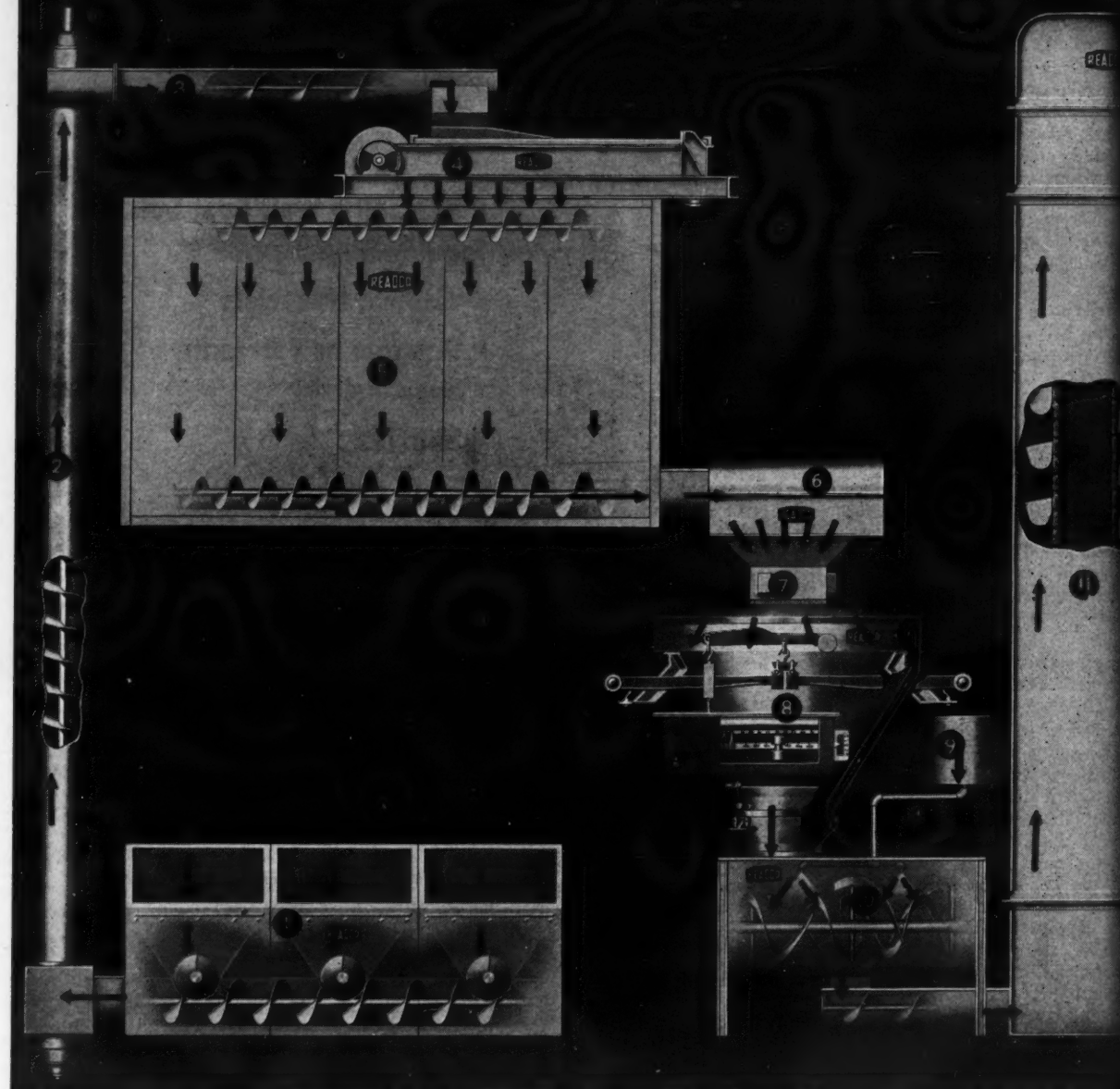
**Problem** — Construction of new laboratory of metal organization (St. Lawrence Alloys and Metals, Ltd., Beulaharnois, Quebec) required that gases from furnaces and testing tables in the basement be dissipated through a brick chimney running up through the center of the building. Due to the corrosive action of the gases it was felt that periodic and expensive repair jobs would be required if the gases were exhausted directly through a chimney of the customary brick design. Also the noxious gases, indiscriminately released involved an explosion hazard as they contained ammonia, ether fumes, ethyl acetate, chlorine fumes, and hydrochloric, sulfuric, hydrofluoric, nitric and perchloric acids. A most important consideration was to eliminate seepage of fumes into the building which could result with

For more information on product at right, specify CP A933 . . . see information request blank between pages 2-3.



**READCO**

*Chemical Process Equipment*



READCO shop and engineer specialists are ready to fulfill your chemical equipment requirements, whether they call for non-ferrous metals, carbon, special alloy, solid or clad steels, welded or cast. Your new developments need not be held back for lack of equipment. Write today for your copy of the new READCO chemical equipment catalog.



*Flow Diagram Shows How  
**READCO** Processing Equipment  
 Is Engineered To Your  
 Specific Production*



- 1 BLENDING BINS with choice of conveyor speeds in each bin for perfect blending of dry or granular materials.
- 2 SPIRAL ELEVATORS designed with proper pitch and clearances to elevate materials without compressing.
- 3 SPIRAL CONVEYORS precision built with drive shaft running entire length of flight. Fully enclosed in dust tight casing.
- 4 VIBRATING SIFTERS to sieve and aerate efficiently all grades of material through finer mesh screen by a combined reciprocating and vertical rotary motion.
- 5 STORAGE BINS equipped with cross feed conveyors that evenly distribute incoming material and specially designed discharge conveyors that empty contents uniformly.
- 6 ROTARY SCREEN SIFTERS built with revolving cone screen which rotates in opposite direction from revolving brushes to accomplish efficient cleaning and aerating.
- 7 AUTOMATIC CUT OFF GATES to assure greater accuracy by cutting off flow of material.
- 8 DUSTLESS AUTOMATIC WEIGH HOPPERS mounted stationary for discharging into one mixer or on a trolley and track for operation over a battery of mixers.
- 9 LIQUID WEIGH TANKS which automatically weigh and temper predetermined quantities of liquid with extreme accuracy.
- 10 BLENDERS designed and built with counter flow agitators to prevent build up of material at either end. Made in all sizes to meet specified requirements.
- 11 BUCKET TYPE ELEVATORS for either centrifugal discharge or central discharge of material. Designed to assure perfect coordination of material movement to the mixer.
- 12 HOPPERS built with or without weighing mechanism and exclusive dust eliminating features.
- 13 AUTOMATIC LIQUID METER for volume control. Accurate and easily read thermometer, safety overflow and drain outlet. Operation is entirely mechanical, requiring no electrical current.
- 14 LABORATORY, PILOT AND PRODUCTION MIXERS of all types including the recognized single packing gland, double arm mixer with exclusive designed features to eliminate contamination are built in sizes ranging from 2.5 gallon to 1200 gallon capacity.

## New Solutions

disintegration of the ordinary brick.  
*Solution* — Two 8 inch I. D. flues of corrosion resistant carbon pipe were built into the chimney to carry the gases and protect the brickwork. Two flues were constructed to keep separate those gases that might cause an explosion if permitted to mix. Metal hoods mounted over the testing tables and furnaces and connected to the horizontal carbon tubes carried ammonia, hydrochloric acid, ether, and ethyl acetate gases into the Number 1 flue; hydrofluoric, sulfuric, nitric, perchloric acid gases and chloride fumes being directed into Number 2 flue. The gases were exhausted by mechanical means. To minimize condensation, and liquid backdrip that might be caused by rain or snow fall in the flue openings at top of chimney, roofed chambers with side outlets were built of carbon brick. The bottom of each flue consists of a slanted carbon disc covered with a built-up layer of carbon cement. If condensation and formation of acid solutions should occur in the bottom of the flues, they will flow out through small carbon pipe spillways located directly under inlet section when drip cock is opened.

*Results* — The system has proved highly efficient and the fumes originating in laboratory are undetectable on floors above. Period of maintenance free service is indicated at 30 years.

NATIONAL CARBON CO., Dept. CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A934  
 — see information request blank, pgs. 2-3

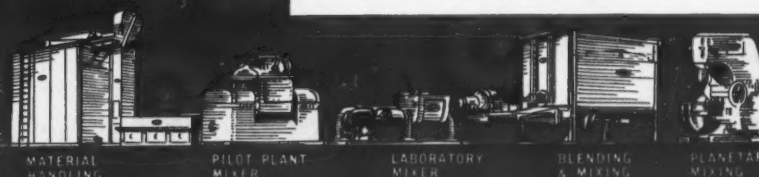
## Use of Welding Methods in Maintenance and Production

A recent issue of publication of producer of welding alloys contains solutions through welding of salvage problems. One of these concerned the welding of a huge iron casting imbedded in concrete, a discharge fitting in a circulation pump; another deals with repairs on cutting dies used in knifing out leather shoe sections in which after welding the dies are ground, put back into service without subsequent heat treatment; a third tells how welding of galvanized or lead coated steel may be performed without seriously damaging the coating of lead or zinc.

EUTECTIC WELDING ALLOYS CO., Dept. CP, 40 Worth St., New York 13, N. Y.

When inquiring specify CP A935  
 — see information request blank, pgs. 2-3

# READ



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**You are wasting manpower  
and paying too much for  
moving materials**

**IF— your trucks are not**



**HydroElectric**  
**and other  
low-cost hand  
LIFT TRUCKS**

These trucks cost less than 12 cents per day for power will triple the tonnage your truckers can move. Simply press a button — off moves the load — the trucker merely steers. Precision built with positive gear drive as only the Stuebing Brothers know how, these HydroElectrics out perform — out wear and cost less to operate than any lift truck built. That's why America's greatest industries re-order them again and again.

Get full information today. Stop using three men on jobs one man (or woman) can do easier. — Write today.

**LIFT TRUCKS, INCORPORATED**

2425 Spring Grove Avenue . . . . . Cincinnati 14, Ohio



Knowing how since 1910 naturally produces lift trucks superior in design and construction.

When inquiring specify CP A936 . . . see information request blank, pgs. 2-3

## New Solutions

**Car Spotters Move Long, Heavy  
Tubing, Save Time, Manpower**

*Permit one worker to handle job formerly  
requiring six men*



**Problem** — Difficulties pulling long pieces of flexible tubing into and out of stock pile in metallic tub plant was made even more a problem by manpower shortage. A means of simplifying this operation placing material in storage removing for shipping

Above — pulling 6" x 40" out of body of stock bin. Other end of rope wrapped around capstan of spotter in yard. Right — pulling tubing into bin.



transferring to saw was sought.

**Solution** — The remedy for this difficulty was suggested by a similar application of the same equipment. The plant managers had read how electric car spotters had been used to move large, heavy molds in foundry and felt the tubing could be moved likewise. Now, with an electric car spotter installed, the attendant, in some cases a woman worker, simply gives the haulage rope several wraps around vertical capstan and then feeds away the rope while the motor operated capstan does the actual pulling and moving of the load. In this instance the installation consisted of two spotters because of the length of the tubing to be handled — and the limited clear space available at each end of the stock bin. One end of the bin extends practically all the way to the building wall. The saws are close to other end of bin. The spotter for pulling the tubing maximum distance into bin utilizes a snatch block in the operation. The other spotter is located in plant yard and is used for pulling the tubing all the way out of stock pile after which rope is attached to other end of tubing still in building to permit first spotter to pull tubing back into aisle the required distance for transfer to feed trough of saw. (Spotters made in two sizes having starting rope pull of 5,000 and 10,000 pounds respectively — portable, or truck if desired).

**Results** — Flexible metallic tubing up to 40 feet long and weighing up to 700 pounds is easily and quickly pulled into stock bin. This formerly required six men or more. Difficulty of handling long tubing in limited space overcome. Booklet Number 1992 gives details on "Link-Belt" car spotters.

LINK-BELT CO., Dept. CP, 307 N. Michigan Ave., Chicago, Ill.

When inquiring specify CP A937 — see information request blank, pgs. 2-3



## New Solutions

### Built-in System Stops Degreasing Machine Fires

*Carbon dioxide forced under own pressure to chambers as vents, ducts are closed*

**Problem** — Volume parts cleaning with self-contained units that automatically wash, slush, rinse, dry machine parts and equipment components involves fire protection requirements because of the quantity of flammable liquids used.

**Solution** — Built-in systems which form integral part of various washing machines, with carbon dioxide as the extinguishing agent are now being used by several washing machine manufacturers (Industrial Washing Machine

SMALL UNITS have own cylinder

Corp. and Detrex Corp.) and conveyor, cabinet, rotary drum, monorail, vertical and tear down have this safeguard. Basic operation is illustrated in manner in which they function in large tear down washers. Such machines carry parts from wire mesh conveyor at load end through two washes and a rinse, a cold blowoff and a hot blowoff discharging them clean and dry. Three tanks supply highly inflammable Varsol or kerosene. Mounted on the side of the machine are two large steel cylinders filled with carbon dioxide compressed to 850 psi at 70 degrees F. High in the hood of the machine are mounted heat actuators which at outbreak of fire relay an impulse which sets system in operation. Upon release, the carbon dioxide under power of its own expansion gushes from special built-in shielded nozzles installed above each cleaning chamber on the air washer and spray eliminator. Simultaneously vent openings are closed and fan, pump motors are shut off by pressure trips. System may be operated manually if emergency requires.

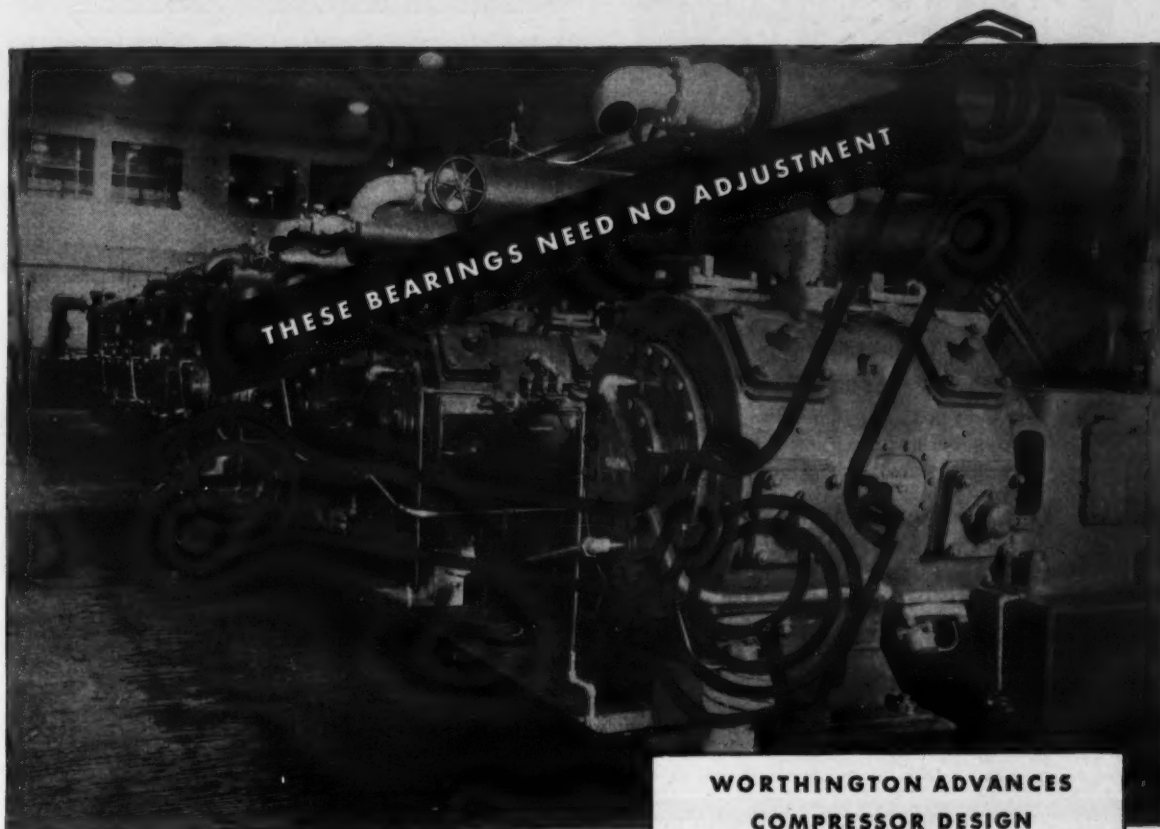
**Results** — Operating on expansion of the liquefied gas system is not dependent on outside source. Fire closed within machine, which is rapidly filled with carbon dioxide, is quickly extinguished. Maintenance requires only periodic inspection and recharging only when weight indicates loss of 10% of gas through discharge.

WALTER KIDDE & CO., Dept. CP, 140 Cedar St., New York 6, N. Y.

When inquiring specify CP A938 — see information request blank, pgs. 2-3

For complete information regarding products described in this issue a handy request slip is provided between pages 2 and 3. Check the items that interest you, fill in name and address and send it to publishers. Information will come to you promptly.

## NO MORE SUNDAY WORK



### WORTHINGTON ADVANCES COMPRESSOR DESIGN



The famous Feather\* Valve is another example of Worthington compressor pioneering.

**TIGHTER**—valve is made tight by the pressure on the thin flexible strips.

**SIMPLER**—no buffer plates or cushioning devices.

**QUIETER, SAFER**—at high speeds—light, contact seating.

**LESS FRICTION**—flexibility, large lift area, contact seating.

**ACCESSIBLE**—valve removed within five minutes.

**LOWER MAINTENANCE**—valve practically indestructible; intake and discharge valves identical and interchangeable.

\*Reg. U. S. Pat. Off.

Now Worthington Compressor Engineers announce the development of new-type frame bearings and connecting rods for type DC motor-driven, type OXP duplex steam-driven, and angle gas engine driven compressors.

With pressure lubrication on most sizes, this latest refinement in compressors permits heavy-duty continuous service, without any of the Sunday maintenance work commonly required by obsolete wedge adjustable bearing designs. Also avoids expensive accidents resulting from broken wedge bolts. Save outage, man-hours, maintenance time . . . it all adds up to a big saving in operating expense.

Once again . . . as in the development of Feather\* Valves, Worthington compressor engineering leads the way toward better compressor performance. Write for complete details . . . Publications Department, Harrison, N. J. Worthington Pump and Machinery Corporation, Buffalo Compressor Division, Buffalo, N. Y.

**WORTH BEHIND THE NAME WORTHINGTON**



NO OTHER COMPRESSOR WILL OUTPERFORM A WORTHINGTON

When inquiring specify CP A939 . . . see information request blank, pgs. 2-3

## WATER-SEAL STUFFING BOX

For Processing and  
Chemical Industries

8428-A



Taber single suction Centrifugal Pump, equipped with a drip chamber and cover for handling chemical solutions. When used for vacuum service on evaporators the drip chamber is filled with water. This prevents air from entering through packing. The stuffing box is thereby water-sealed.

PLEASE WRITE ON YOUR  
LETTERHEAD FOR HELPFUL TABER **BULLETIN CL-339**

**TABER PUMP CO.** ESTABLISHED 1859  
294 ELM STREET BUFFALO 3, N. Y.

**Taber Pumps** for Higher Practical Performance

When Inquiring specify CP A940 — see information request blank, pgs. 2-3

HANDLING + Processing + HANDLING + Assembling + HANDLING  
+ Packing + HANDLING + Storage + HANDLING



**HANDLING MATERIALS** — most common of all production operations — is the key to better plant, dock and terminal performance. Handling starts with the raw materials, follows on through all phases of production and distribution, never stopping until the finished product is delivered to final destination. Write Towmotor Corp., Div. 7, 1226 E. 152nd Street, Cleveland 10, Ohio.

ASK FOR TOWMOTOR DATA FILE

**TOWMOTOR**

THE ONE-MAN-GANG

When Inquiring specify CP A941 — see information request blank, pgs. 2-3

## New Solutions

### Knit Type Wire Mesh Helps Solve Entrainment Problems

*Liquid fogs removed from vapor phase*

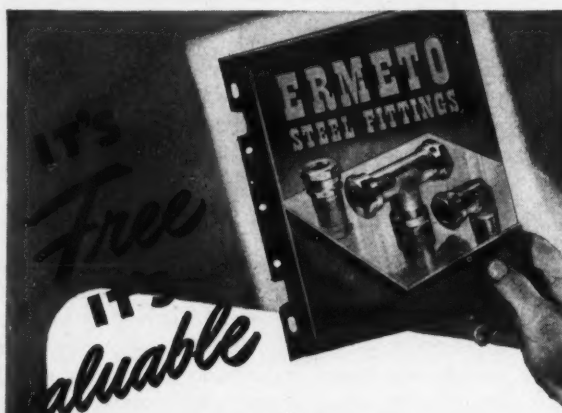
**Problem** — A still operator wished to increase throughput for greater production in an existing still but found, due to the higher velocity, that the heavier ends were being entrained, reducing the purity of the distillate.

**Solution** — A separation unit of the Metex knit wire mesh having over 95% free volume was prepared in sections which could be carried through the manhole and supported by a simple frame-work. The sections were tailored to give a snug side wall fit and were simply placed in the column without requiring any cutting and fitting in this large diameter tower.

**Results** — The undesired heavier fraction of the liquid was removed and flowed counter-current to the vapor phase so that operation was continuous without fouling. Pressure drop of less than one inch of water was maintained at the desired flow velocity, which in this case was unusually high. The manufacturer also offers small units for preliminary laboratory or pilot plant tests at moderate costs. Inquiries should include information as to the linear velocity and allowable maximum pressure drop. Choice of materials is offered for various corrosive conditions, such as nickel, monel, other high nickel alloys, various types of stainless steels, copper bearing alloys and ordinary basic steel.

METAL TEXTILE CORP., Dept. CP, Orange, N. J.

When Inquiring specify CP A942 — see information request blank, pgs. 2-3



Send today for this completely descriptive catalog of our money-saving, time-saving Ermeto fittings. No flare—no weld—no thread—no solder. Used on hydraulic, oil, water, gas and fuel lines of every nature. For information or literature, write or phone any Weatherhead branch office.

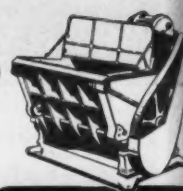
**Weatherhead**

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO  
Branch Offices: New York, Philadelphia, Detroit,  
Chicago, St. Louis, Los Angeles

Look Ahead with

When Inquiring specify CP A943 — see information request blank, pgs. 2-3

### What's Your "CRUSH" And "CARRY" Problem?



Do you have semi-friable materials . . . filter cakes, precipitates, residues, chemicals that have solidified, bulky supplies . . . that must be crushed for processing? You will obtain efficient results quickly with . . . **G-W Heavy-Duty Breakers.**

Do you need a labor, time and money saving system for handling . . . storing materials . . . transporting finished products to your shipping department? You can do it more economically and speedily with a **G-W Conveying or Elevating System** designed especially to fit your conditions and needs.

When you put your "Crush and Carry" problems up to G-W Material-Handling Engineers, you get the benefit of over 130 years' experience in designing, constructing and installing every type of equipment for handling and conveying widely diversified materials and products.

A request for further information obligates you in no way. Write for our Catalog 200-C. **67749**

**GIFFORD-WOOD CO.**

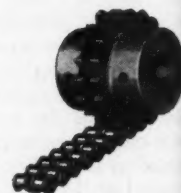
Founded 1814  
430 Lexington Ave. HUDSON, N. Y. 865 Washington St. Chicago, Ill.  
New York 17

When Inquiring specify CP A944 — see information request blank, pgs. 2-3

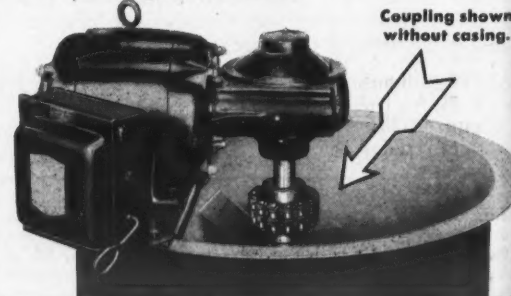
## FLEXIBLE COUPLINGS

Easy to Connect and Disconnect

Two steel sprockets and a length of double-width Diamond Roller Chain comprise this simple, rugged and compact Flexible Coupling. . . The all-steel construction means long trouble-free service. Made in a wide range of capacities from fractional horsepower to 500. The larger bearing areas provide greater horsepower capacity for a given outside diameter. Widely used on mixers, agitators, cotton oil mill drives, pumps, crushers, etc. Write for Bulletin 12C. **DIAMOND CHAIN & MFG. CO., 411 Kentucky Ave., Indianapolis 7, Indiana.**



Coupling shown without casing.



When Inquiring specify CP A945 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## NEW SOLUTION

### Non-Irritating Germicidal Agent For Process Plant Use

*Safely cleanses operators hands; also used on processing equipment in hot or cold solutions*

**Problem** — To wash and sterilize simultaneously the hands of employees and operators in processing plants without the use of soaps, alkalies, phenols, alcohol, mercuric salts, etc. and leave the skin with a residual sterilizing film, and smooth to the touch without harmful effects, irritation or odor.

**Solution** — An antiseptic and germicidal concentrate combining high germicidal potency with very effective detergent and emulsifying properties is used full strength in quantities of a few drops as supplied from dispensers at wash basins. Operators wet hand and lather with a few drops of the concentrate. The same lathering and sterilizing efficiency afforded to surgeons and nurses is provided. This sanitizing agent, "Emulsept," has same pH (5.5.5) as human skin which is one reason for lack of irritation. The combined properties of good detergency, low toxicity, low surface tension, high germicidal potency and lack of odor make it valuable in sanitizing food processing equipment and even in washing fruits and vegetables before processing.

**Results** — Provides thorough, safe, washing and sterilizing of operators' hands without irritation of skin, cracking nails. The concentrate is odorless, low in cost, non-damaging to practically all foods and equipment. Saves time, labor and protects equipment. Can be used hot or cold. In many cases, preliminary washing with soap and other alkalies is unnecessary. (Soap residues should be removed by rinsing before sterilizing with this "Emulsept" in solution.)

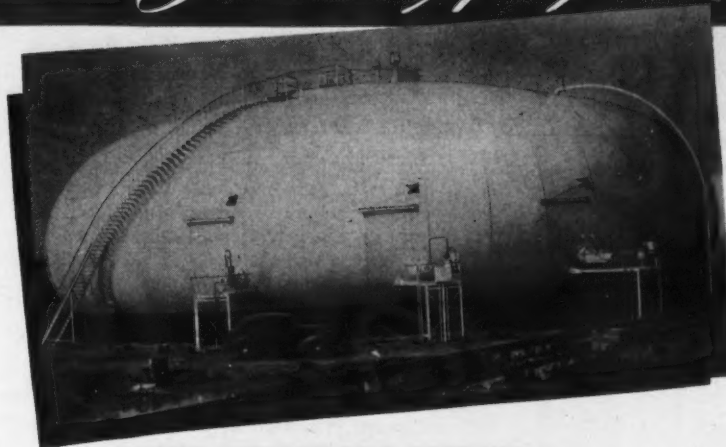
**Description** — Particularly suited for use in pharmaceutical, cosmetic, textile plants, breweries, canneries, meat and cold storage plants. Solution for sanitizing tanks, pumps, cookers, mixers, conveyors, etc. one ounce to two gallons of water. For final sterilizing rinse or for use on floors and walls one ounce to four gallons. A handy easy to use test kit is available for testing strength of solutions in conformance with local, state and federal requirements. Bulletin F. gives complete details.

THE EMUSOL CORP., Dept. CP, 59 E. Madison St., Chicago, Ill.

— see information request blank, pgs. 2-3  
When inquiring specify CP A946

For more information on product at right, specify CP A947  
... see information request blank between pages 2-3.

## Process Adapted Agitation



### MIXING AND BLENDING PROBLEMS

Regardless of what your liquid blending problems may be, it will repay you to consider Process Adapted Agitation in the following operations:

Mixing  
Dissolving  
Agitating  
Suspending  
Solids  
Scrubbing

Blending  
Catalyzing  
Emulsifying  
Batch or  
Continuous  
Process

Circulating  
Bleaching  
Washing  
Contacting  
Heat Exchange  
Improvement

Precipitating  
Reacting  
Crystallizing  
Extracting  
Gas Absorption

### HOW YOU CAN SOLVE THEM

Mixing Equipment Company has 23 years of experience which has resulted in research facilities and skill which qualify it as an authority not only in mixing equipment, but in recommending the proper type of agitation to solve your particular problems. Mixing Equipment Company offers its services in the solution of any problem involving controlled recirculation of liquids to produce physical and chemical changes.

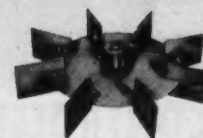
There is a process adapted agitator for every shape and size of tank and every operation.

### EQUIPMENT THAT WILL DO THE JOB

**"LIGHTNIN" SIDE-ENTERING MIXERS** in capacities from 1 to 25 H.P. are designed primarily for use in large tanks, singly or in batteries depending upon the size of the tank, the materials to be mixed and the time desired to accomplish the agitation. Also suited for smaller tanks where other types of mountings are not practical. The adaptability of "LIGHTNIN" Side Entering Agitators and the ability to do a thorough job of agitation have made mixing in tanks as large as 5,000,000 gallons capacity practical, economical and efficient.

**"LIGHTNIN" PORTABLE TYPE MIXERS—Gear Drive Units** (1/4 to 10 H.P.) operating at slow speed (400 R.P.M.) are generally recommended for fairly viscous liquids, ranging from 500 to 4,000 centipoises. They give remarkably thorough general agitation throughout the mixing vessel. These units are soundly engineered for life.

**Direct Drive Units** (1/4 to 10 H.P.) For lighter liquids, dissolving materials, suspending light solids. Operating at a propeller speed of 1,150



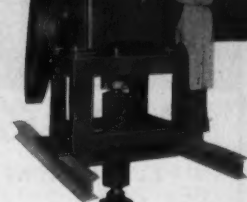
**Fig. 1** Straight blade Radial Flow Turbine. Simplified shape for general agitation. Preferred for lead and rubber covering.



**Fig. 2** Curved blade Radial Flow Turbine. Simplified form for blending and general agitation.



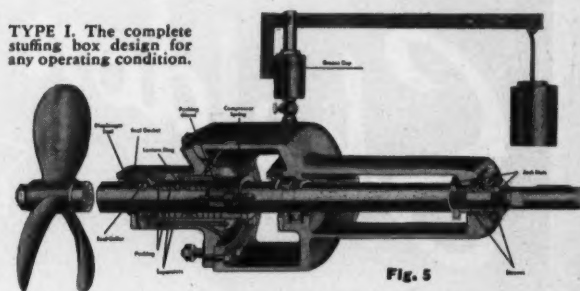
**Fig. 3** Disperser type. Radial Flow Turbine for gas-liquid, liquid-liquid, solid-liquid dispersion.



**Fig. 4** Turbine Type—Requires center mounting and baffles, but permits use of longer shaft than propeller type. All speeds below 200 R.P.M.



**TYPE I.** The complete stuffing box design for any operating condition.



**Fig. 5**

or 1,750 R.P.M., these versatile mixers produce a propeller stream velocity capable of mixing remarkably large quantities of liquids.

**"LIGHTNIN" TOP ENTERING UNITS (Propeller and Turbine Types).** The extended line of Mixco Heavy Duty Agitators (up to 50 H.P.) for open and closed tanks, finds wide application in the newer catalytic processes, providing intimate dispersion, fine particle size and high rates of recirculation within tank. Newer types of impellers decrease weight and diameter. Improved designs for using seals instead of conventional stuffing box, are optional.



**MIXING EQUIPMENT COMPANY, Inc.**

1085 GARSON AVENUE, ROCHESTER 9, N. Y.

**MIXING EQUIPMENT CO., Inc.**

1085 Garson Avenue, Rochester 9, N. Y.

Please send me the literature checked:

- ☐ B-62—Side Entering Mixers
- ☐ B-76—Side Entering Mixers
- ☐ B-73—Top Entering Mixers
- ☐ B-75—Portable Mixers (Electric and Air Driven)
- ☐ B-77—Laboratory Mixers
- ☐ M-12—Operating Data Sheet

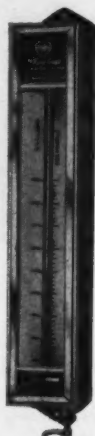
Name

Address

## ★ INSTRUMENTS of CONTROL

### Chemical Tank Gauge Uses U Tube Principle in Weighing, Blending

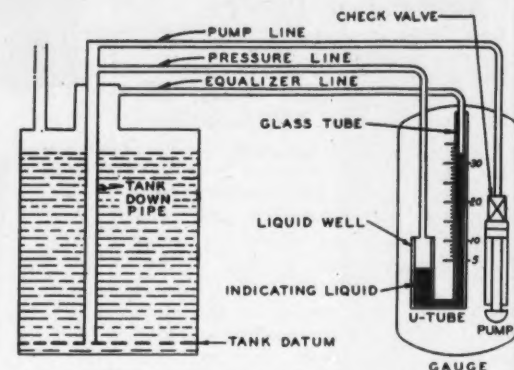
*Accurate readings regardless of specific gravity; even when liquids of different weights are mixed*



**Uses** — For measuring, checking quantities of weighable liquids including those which vary greatly with temperature changes such as oil, gasoline; in formulating and blending processes in chemical, pharmaceutical, synthetic resin manufacture, paint and varnish plants. Also, distilleries, rectifiers and bottling plants.

**Features** — The gauge, using the U-tube, frictionless balance principle can be used to accurately "weigh" the contents of a tank, just as though it were placed on a beam scale. With the gauge graduated in pounds accurate readings can be obtained regardless of the Specific Gravity of the liquid within the tank. This is so even when liquids of several different weights are to be mixed. Remote reading design permits location of gauge at distance and gauges for several tank installations can be centralized at a desired point. Close control

provided makes for accurate liquid inventory and econ-



TYPICAL INSTALLATION WITH TANK FULL

omies. The gauge offers protection against hazards that may be encountered in manual gauging of various materials such as acids, hot liquids and vapors, as well as in flammable fluids. Gauge employs no floats, gears, diaphragms or moving parts.

**Description** — The standard gauges (identified as T models) have depth reading capacity up to 11 feet of water or 15 feet of gasoline. These gauges are rigidly constructed in steel cases, rustproofed and finished in baked black enamel wrinkle finish. The face glass bezel is formed of bright metal which holds the glass securely to the instrument case in a dust-proof assembly. Available with either Red or Green indicating liquid. Red S. G. — 2.99; Green — 1.20. Mercury models are available where required, as well as special lengths in "T" style. The accompanying drawing shows the gauge in operation with liquid in the tank. The pressure created by the hydrostatic head of liquid in the tank against the air entrapped in the tank down pipe is transmitted through pressure line to the indicating liquid in the U tube. The U tube is fully enclosed in a case which includes small metal hand pump and check valve but compressed air may be used instead of pump. Accurate readings under varying conditions of pressure or vacuum in the tank are secured by placing the gauge in a "closed balanced circuit" with the tank by means of an "Equalizer Line," which balances pressures on gauge and tank. An example of the use of this gauge is found in case of indication of weight of liquid in an aerated fermenter under vacuum solution at high temperature. Here standard gauge head was used but tank unit was made of standard stainless steel dairy fittings arranged for steam cleaning without removing from tank or disturbing gauge connections. Results — high accuracy in readings, turbulence had no effect. Literature and detailed information in regard to individual requirements on request concerning the "King Gauge."

KING ENGINEERING CO., Dept. CP, Ann Arbor, Mich.

When inquiring specify CP A950 — see information request blank, pgs. 2-3

### Manually Preset Interval Timer

*For plastic molding, rubber curing, blower, pump, machine and conveyor operations*

**Uses** — In plastic molding, rubber curing applications, batch mixing, heat treating, enamel baking, liquid agitation, light exposure, cooking, blower, pump and conveyor regulation; also controls on preset schedules for routine

CHEMICAL PREVIEW

### VARIABLES CONTROLLED

*... without being recorded*

Sometimes, you need a control instrument where a chart record is either not needed or there is a recording instrument already installed.

Bristol's new Model 93 Air-operated Controller handles temperature, pressure, liquid level, humidity or flow. Has Bristol's exclusive Free-Vane (frictionless) system. Bulletin A115 gives complete details. Address The Bristol Company, 141 Bristol Road, Waterbury 91, Connecticut.



AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

When inquiring specify CP A948 — see information request blank, pgs. 2-3

# Sheldon



## TIME TESTED . . .

Almost a half century of craft experience and user satisfaction confirms the outstanding excellence of SHELDON products . . . an excellence attested by the nation's leading schools, colleges, universities, hospitals and scientific departments of industrial plants.

Continuous research and postwar planning add to the value.

Experienced SHELDON planning engineers are available, without obligation on your part, to help you prepare room layouts, compile budgets and write specifications. Wire or write.

**E. H. SHELDON & COMPANY**

MUSKEGON, MICHIGAN

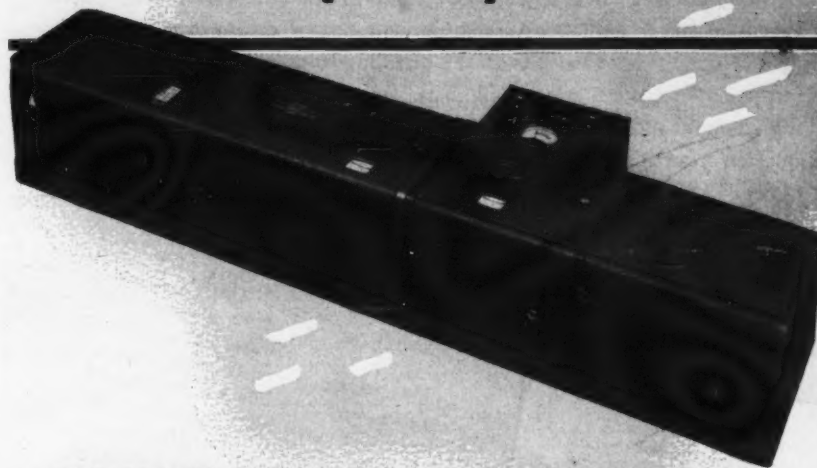
When inquiring specify CP A949 . . . see information request blank, pgs. 2-3



## INSTRUMENTS

## A Great New Stride in Spectrophotometric Equipment

# THE NEW BECKMAN IR-2 Infrared Spectrophotometer



INCORPORATES FAR-REACHING ADVANCEMENTS IN ACCURACY,  
ADAPTABILITY AND SIMPLIFIED OPERATION

**J**UST as the original Beckman Infrared Spectrophotometer made possible the first practical and widespread application of infrared methods for industrial process control, this new Beckman advancement marks another great step forward in spectrophotometric design and performance.

The Model IR-2 embodies many new and useful features resulting from the years of experience gained by the Beckman organization in producing more infrared spectrophotometers *than all other manufacturers combined*. While the earlier instruments were designed specifically for routine analysis of hydrocarbons, the new Model IR-2 emphasizes maximum adaptability to a wide range of general applications. It is equally suitable for routine analysis or research investigations—on gases, liquids or solids—and it provides many novel features not heretofore available in even the most expensive research instruments.

Under war emergency conditions only plants of urgent importance to the war effort have been able to purchase Beckman Infrared Spectrophotometers. But increased production is now making these instruments available for general laboratory and industrial use . . . and simultaneously Beckman is making available this new years-ahead instrument. If you are planning the purchase of spectrophotometric equipment, *it will pay you to investigate the new IR-2.*

Outlined at the right are a few of the important features of this advanced instrument. Write for more detailed information.

**BECKMAN INSTRUMENTS**  
NATIONAL TECHNICAL LABORATORIES • SOUTH PASADENA 11, CAL.



**INSTRUMENTS CONTROL MODERN INDUSTRIES**

## IMPORTANT FEATURES OF THE BECKMAN IR-2 SPECTROPHOTOMETER

• **Unusual Versatility** is provided by interchangeable elements. Various types of light sources, cell holders, etc. can be interchanged to adapt the instrument to a wide range of applications on liquids, solids and gases. Even cells with path-length of a meter or more can be used.

• **Increased Accuracy and Stability** are obtained through use of a new energy measuring system employing a bolometer and vacuum tube amplifier. This system eliminates temperature drift, non-linearity errors and vibration difficulties that are characteristic of conventional thermopile-galvanometer systems.

• **Constant Temperature** insures accuracy at all wavelengths. The monochromator and cell compartments are thermostated, eliminating the uncertainty of inadequate "temperature compensation" and making a constant-temperature room unnecessary.

• **Quick Easy Readings** can be made directly in percent transmission and optical density, and provisions are made for direct-connecting a standard potentiometer-type recorder. The wavelength range is 1 to 15 microns and wavelengths can be selected either by a continuous wavelength drive calibrated directly in microns or by a 17-position stop-mechanism that greatly simplifies routine analysis operations. Accessory equipment includes a motor drive for continuous wavelength scanning.

• **Constant Radiation** at all times is another important advancement. The source of radiation is a photoelectronically stabilized Nernst lamp which insures constant radiation regardless of line voltage fluctuations.

• **Hermetically Sealed**, the optical path is free of CO<sub>2</sub> and water vapor. Two-stage drying protects precision optical elements.

These are only a few of the improvements incorporated in this new Beckman development but they are typical of many unusual features to be found in the IR-2 that make this the most advanced Spectrophotometer available.

operations such as control of ventilating fans and night heating shut down.

**Features** — Setting knob directly connected to switch operating cam; unit does not set through a clutch; this provides positive switch action. All energy required to operate switch itself is built up by manually setting pointer. Motor and clutch thereby relieved of all drag. Switch—single pole, double throw, 1000 watt capacity, fully enclosed. Underwriter's approval. All parts rust proofed and protected against corrosion.

**Description** — This series (No. 2500) is designed to be mounted to the surfaces of any type of panel or directly to the surface of the equipment the timer is to control. It is also designed to be mounted directly to over and to any standard single gang switch box or handy box. Available flush mounting or wall mounting with conduit connector. The enclosure is of seamless drawn steel. Timed and electrically operated by a powerful self-starting synchronous motor operating at a slow speed of 450 rpm initial rotor speed. Maximum overall dimensions are 4 7/8 x 3 1/16 x 2 inches. (depth measured to top surface of dial) Bulletin Number 4492.

PARAGON ELECTRIC CO., Dept. CP, 37 W. Van Buren St., Chicago, Ill.

When inquiring specify CP A951 — see information request blank, pgs. 2-3

## Direct Reading High Vacuum Gauge 0-3000 Microns

*Indicates water vapors with greater sensitivity than dry air; accuracy is obtainable to a tolerance of + or - 5% or two microns, whichever is greater*



DC OPERATED GAUGE

**Uses** — For accurate high vacuum measurement in various industries ranging from production of vitamin capsules to thermos bottles and also radio tubes, vacuum bellows, magnesium, fluorescent lamps and thermometers.

**Features** — These DC operated gauges require only one or two No. 2 dry cells and may be installed in rubber, sealed to hard or soft glass systems, or coupled to one half inch standard pipe connections. It indicates at all times the exact degree of vacuum of system to which it is connected, does not discriminate against condensable vapors, but indicates water vapors with greater sensitivity than dry air.

**Description** — This "Tru-Vac" gauge gives readings within a range of 0-3000 microns. It takes note of vacuum changes as they occur and is adaptable to any high vacuum or pump system. It is direct reading as state of vacuum may be noted at any time. Electrical in operation and the indicating mechanism or meter box and pressure element can be installed together at the exhaust station, or the meter box may be installed at a more remote location. The standard gauge is calibrated for dry air but can be supplied with calibrating for other gases.

CONTINENTAL ELECTRIC CO., Dept. CP, Geneva, Ill.

When inquiring specify CP A952 — see information request blank, pgs. 2-3

When inquiring specify CP A953 . . . see information request blank, pgs. 2-3

# ELECTRONIC FINGERS

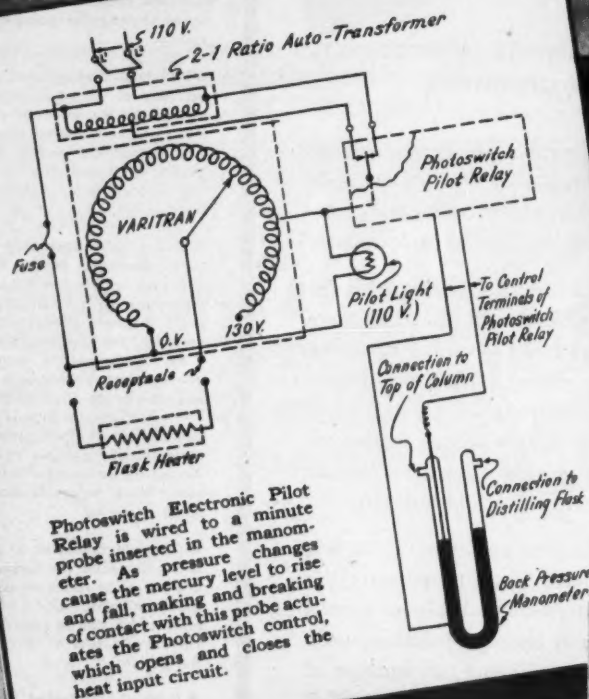
## THE WAY - - -

### to Maintain Constant Vapor Velocity

With the aid of Photoswitch Pilot Relay, Podbielniak Centrifugal Company, manufacturer of laboratory equipment, puts electrons to work to maintain a constant vapor velocity in the distilling column of their high-temperature fractional distillation apparatus. As only microamperes are passed through the manometer fluid there is no danger of electrolysis, oxidation or explosion from sparking contacts in the presence of inflammable vapors.

Photoswitch is putting electronics to work . . . today . . . controlling levels of liquids and powders; detecting concentrations, contamination, turbidity, smoke and vapor density; safeguarding machines and property; counting, inspecting and routing production; timing for split-second repeat-cycle accuracy; preventing explosions in heating equipment and maintaining boiler water levels automatically.

★★★  
Photoswitch engineers are ready to work with you now. . . . Write to Photoswitch Incorporated at Cambridge 42, Massachusetts.



Field-proven for accuracy and reliability, Photoswitch Pilot Relay is an integral part of this precision laboratory equipment.

# PHOTOSWITCH INCORPORATED L-3

## PHOTOELECTRIC AND ELECTRONIC CONTROLS FOR EVERY INDUSTRIAL PURPOSE

When inquiring specify CP A954 . . . see information request blank, pgs. 2-3

## INSTRUMENTS

### Plastic Funnels and Graduates

Transparent, non-shatterable; do not bend or corrode; quantity markings molded-in



FOR PLANT & LAB USE

Uses — For industrial and laboratory use by bottling works, dairies, liquid and dry chemical transfer; with solvent soils, chemicals, cosmetic, pharmaceutical, petroleum distilling applications.

Features — Quantity markings as part of mold and resistant to body and food acids. Low cost permits use in quantities.

will not rub off or chip off. Light weight, non-shatterable and resistant to body and food acids. Low cost permits use in quantities.

Description — Made of "Lumarith" plastic by injection molding process. Funnels: Number 10 has capacity of one ounce; Number 25, 2½ ounces; Number 40, 10 ounces; Number 80, 8 ounces; Number 160, 16 ounces. Graduates: Accurate, graduated on half ounce graduations, cubic centimeters and millilitres; Number 85 has capacity of 8 ounces; Number 165, 16 ounces. Both have pouring lip. Folder on request.

B & W MOLDED PLASTICS, Dept. CP, 1346 E. Walnut St., Pasadena 4, Calif.

When inquiring specify CP A955 — see information request blank, pgs. 2-3

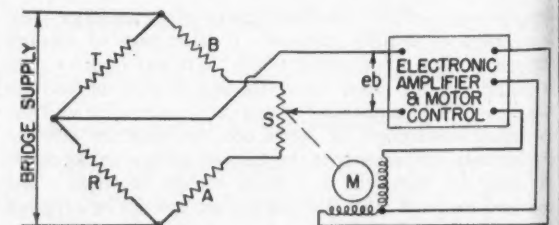
### Electronic Type Thermometer For Recording and Controlling

Unbalance of measuring bridge detected by tubes without galvanometer or other parts

Uses — Indicating, recording, controlling temperatures between 100 F and 1000 F.

Features — May be provided with as many as four recording pens, each one having its own continuously connected electronic control unit and measuring bridge for instantaneous response to change in temperature.

Description — Recorder operates on null balance principle and provides instantaneous balancing action by electronic detection and control. Unbalance of the measuring bridge is detected by electro tubes without the aid of galvanometer or other moving parts. The recorder controller indicates, records and controls temperature. A 29 inch indicating



T = TEMPERATURE SENSITIVE PLATINUM RESISTANCE  
A, B & R = FIXED RESISTORS M = SLIDEWIRE DRIVE MOTOR  
S = SLIDEWIRE

CHEMICAL PREVIEW



## INSTRUMENTS

scale encircles the chart and pointer reading coincides with that of recording pen. Indicating, recording and controlling mechanisms are driven by the same reversible electric motor (reversible) which adjusts the side wire resistance to balance the measuring bridge. This motor is continuously connected to the electronic control unit which in turn is continuously connected to the measuring bridge shown in drawing. The temperature sensitive element is a platinum resistance wire, wound on a mica form and held between two mica sheets which are clamped by a metal frame. The element is further protected by a well which is permanently installed in the pipe line, furnace wall, duct or other point of temperature measurement. The temperature element is diagrammatically represented in drawing by the Resistor T. Resistors R.A.B. are fixed and are designed to provide proper range of measurement. Adjustment of the slidewire contact on the resistor S subtracts resistance from A and adds resistance to B or vice versa. Thus, the bridge is balanced by adjusting the ratio of the bridge arms and the necessity of carrying bridge current through the slidewire contact is avoided. Variations in contact resistance are thus prevented from effecting calibration. Since alternating current is used for the bridge no battery source of bridge voltage is needed. Standard voltage cells and voltage standardization equipment are not required. Controls for two temperatures may be provided by multiple pen electronic recorder-controller. Alarm contacts may also be provided for the recorder units.

BAILEY METER CO., Dept. CP, 1050 Ivanhoe Rd., Cleveland, Ohio.

When inquiring specify CP A958 — see information request blank, pgs. 2-3

## Cold Room Thermometer Records Temperatures on Outside Chart

*Bulb temperatures indicated on instrument placed outside at distance up to 100 feet*



**Uses** — This instrument provides a permanent, indelible, degree by degree seven day temperature record.

**Features** — The thermometer may be located for utmost convenience outside the cold room, even as far away as 100 feet if desired.

**Description** — Stainless steel tubing connects stainless steel temperature bulb in cold room with the instrument. The

manufacturer's "Accuratus" tubing is so constructed that bulb temperatures are transmitted to the recording instrument without effects from temperatures through which the tubing passes. The tube system is mercury filled; no additional compensating tube system and temperature are required. Bulletin 98067 on request.

TAYLOR INSTRUMENT COMPANIES, Dept. CP, P. O. Box 110, Rochester 1, N. Y.

When inquiring specify CP A959 — see information request blank, pgs. 2-3



These are the original electric liquid level controls, pioneered by us in 1933. They have no floats — no vacuum tubes — no moving parts in the liquid. They control variations of levels of 1/4" or more, and are not affected by pressures, temperatures, acids or caustics. Relay can be located any distance from the electrode.

### WRITE FOR CATALOG

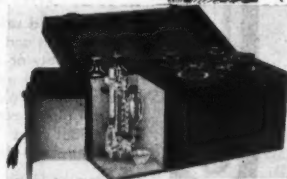
New CATALOG 145 contains complete technical descriptions of the many types available, together with wiring diagrams for various installations. Get full information on B/W controls. WRITE FOR YOUR COPY TODAY!

**B/W CONTROLLER CORPORATION**  
2204 E. Maple Road, Birmingham, Mich.

When inquiring specify CP A956 — see information request blank, pgs. 2-3

## READY FOR pH DETERMINATION

PLUG INTO ANY 110 VOLT A. C. OUTLET



The Cambridge pH meter is always "ready-to-go". It may be turned on continuously during the day so that it is available for pH measurements immediately without waiting through a warming-up period to obtain stability. Another feature of the Cambridge is the Electron-Ray Null Indicator. It permits quick, hairline adjustment and cannot be injured by hasty, inexperienced mis-manipulation. Send for Bulletin 901 E.

### LABORATORY MODEL

- Range 0-14, 0-1200 mv.
- Accurate to .02 pH
- Sensitive to .005 pH
- Reproducible to .01 pH

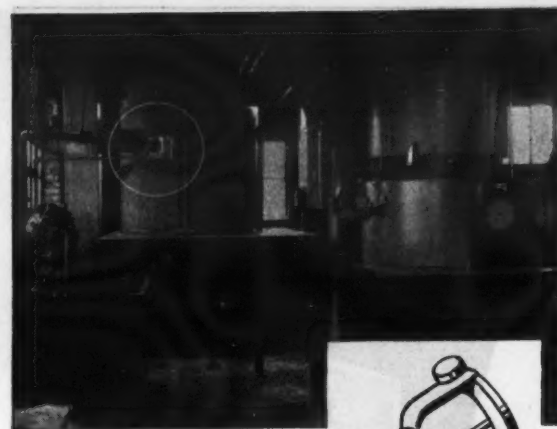
### INDUSTRIAL MODEL

- Range 0-14
- Accurate to .05 pH
- Sensitive to .01 pH
- Reproducible to .02 pH

**CAMBRIDGE INSTRUMENT COMPANY, INC.**

3732 Grand Central Terminal, New York 17, N. Y.

When inquiring specify CP A957 — see information request blank, pgs. 2-3



## Flame-otrol Solves a Safety Problem in Varnish Plant

Another example in process industries where Wheelco Flame-otrol combustion safeguards have solved a safety problem is that of a varnish plant that uses gas and inflammable process materials.

Formerly it was difficult to maintain worker morale. Now, combustion explosion hazard has been removed and efficient protection to expensive equipment and materials is provided. In the opinion of the management, the Flame-otrol repays its cost many times over.

**ELECTRONIC CONTROL PRINCIPLE:** Elec-

tronic in nature, the Flame-otrol utilizes a change in resistance of an electrical circuit (by electrode or Flame-eye) to bring about instantaneous control. All fuel to the burners is shut off instantly upon flame failure.

**ENGINEERING SERVICE:** A Wheelco field engineer will be glad to survey your combustion safeguard problem and submit recommendations. Ask for Bulletin L2-2.



**WHEELCO INSTRUMENTS COMPANY**  
841 W. Harrison St.  
Chicago 7, Illinois

**WHEELCO CONTROLS**

A complete line, including Flame-otrol combustion safeguards... Capacitrol pyrometer controllers... Indicating pyrometers... Proportioning controls... Program controls... and a wide range of accessories.

**WHEELCO**

When inquiring specify CP A960 — see information request blank, pgs. 2-3

**SEND FOR THIS NEW CATALOG!**



Data, specifications and illustrations . . . factual and helpful . . . about Alberene Stone, the material that outlasts the building.

**ALBERENE STONE CORP. OF VIRGINIA**  
419 4th Avenue, New York

When inquiring specify CP A961 — see information request blank, pgs. 2-3

## FOR *Rapid* CARBON AND SULFUR DETERMINATIONS



### V A R I T E M P COMBUSTION FURNACE

Investigate the unique construction of the Varitemp Combustion Furnace which combines transformer, pyrometer, oxygen valve, voltage control switches, power switch and furnace in a single unit.

Close voltage control of the Varitemp Combustion Furnace results in a constant temperature over a long period of operation. All parts are well protected and assembled to give the very maximum in efficiency.

Diameter is 16 inches to allow a heavy wall of insulation, greatly conserving electrical power and comfort of operation. There are no exposed parts which might form a hazard to the operator. Temperature range is up to 2750 degrees F.

The Varitemp Combustion Furnace is recommended for use with the 1 Minute Sulfur Determinator or the 2 Minute Carbon Determinator. These two Determinators provide an accurate and fast method of determining carbon or sulfur in ferrous or non-ferrous materials. The Varitemp is the champion in low price, quality and speed. Write today.

SINGLE TUBE \$148 DOUBLE TUBE \$210 F.O.B. DETROIT

*Harry W. Dietert Co.*

9330 ROSELAWN

DETROIT 4, MICH

When inquiring specify CP A962 . . . see information request blank, pgs. 2-3

## INSTRUMENTS

### Diffraction Angles of Plus-Minus 03 Degrees With X-Ray Spectrometer

*New method of making quantitative and qualitative analyses of crystalline and certain amorphous substances; direct reading*

**Uses** — Valuable for process control in chemical, paint, ceramic, rubber and metallurgical fields, providing a new method of making quantitative and qualitative analyses of crystalline and certain amorphous substances.

**Features** — Under optimum conditions of resolution, diffraction angles are obtained with an accuracy of 0.03 of a degree. Simple, rapid and easy to operate. Cabinet is metal construction with two hinged side panels and encloses high tension transformer, control panel and cooling fan. Recessed control panel eliminates protruding parts. Shockproof shield — One piece casting provides radiation and high voltage protection. Interlock switch provided to render the unit inoperative when shield is removed. Installation space — approximately 2 x 4 feet.

**Description** — Employing a direct-reading principle, the spectrometer quickly identifies the chemical substances present, and their state of chemical combination in a given material. Components of mixtures in quantities of approximately 1 percent, and sometimes less, can be measured. A small amount of the specimen is powdered, mounted on a flat slide and inserted in the specimen holder. The specimen intercepts a fine X-Ray beam in



### AUTOMATIC HYDROMETER Continuously Records Densities!

Here's an invaluable aid to operating efficiency in paper, food and chemical plants! The Foxboro Liquid Density Recorder furnishes continuous, accurate records of density in flowing liquids. May be calibrated in specific gravity, Baumé, Barkometer, Brix, or Twaddell. Automatic Recording Controllers also are available.

Both instruments are for permanent installation. Function without operator's attention. Accuracy is unaffected by foam. Open records easily read to small unit values.

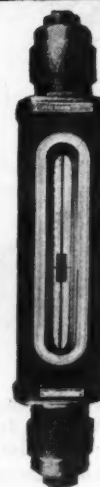
Write for detailed Bulletin A-264. The Foxboro Company, 190 Neponset Avenue, Foxboro, Mass., U. S. A. Branches in principal cities of U. S. and Canada.

**FOXBORO**  
INC. U. S. PAT. OFF.

DENSITY  
RECORDERS

When inquiring specify CP A963 — see information request blank, pgs. 2-3

Here is the ROTAMETER with every flow-measuring feature you asked for!



### The NEW Master-Enclosed ROTAMETER 8 MAJOR IMPROVEMENTS!

Totally enclosed safety construction  
Great strength and rigidity  
Quick assembly or disassembly  
Flanged packing glands  
Outside packing gland adjustment  
Universal piping connections  
Safety float stops  
Clean, attractive design for panel mounting

**Y**OU should really find what you have always desired in a flow-rate meter in the Master Enclosed Rotameter because it was designed from the written suggestions received from two hundred and fifty instrument and process engineers. We combined their desires with features based upon our extensive field experience and built them into the new meter. The Master Enclosed Rotameter has strong, pressed-steel structural members that enable it to take full line strain and hard usage. The rotameter tube is completely enclosed, and the operator, reading through safety-glass panels, is fully protected. Universal end fittings permit horizontal pipe connections at any angle. Stuffing boxes are easily adjusted from the outside, and for cleaning purposes the meter comes apart readily by removing four screws. The Master Enclosed Rotameter is available in all forms — indicating, recording or recording-controlling, in sizes up to 4" for handling a maximum flow of 325 GPM of water or 410 CFM of air. Write to us for Catalog 25-D, which gives complete details.

**FISCHER & PORTER CO.**

4501 COUNTY LINE ROAD, HATBORO, PA.

When inquiring specify CP A964 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## INSTRUMENTS

such a manner as to deflect portions of the beam at various discrete angles over a quadrant scale. When the positions of these reflections are located on the scale by a sensitive electronic indicator, they provide a means of identifying the crystalline form of the material. Identification of some unknown substances can be completed in approximately ten minutes. Components of mixtures can be identified or quantitative analyses quickly made. The specimen is easy to prepare and does not require elaborate alignment precautions. The need for film is eliminated together with film processing, the complications of film density measurements and allowances for film shrinkage errors. Direct intensity measurements are obtained. It is possible to employ the spectrometer in the manufacture of paint to determine the relative amounts of various crystalline forms and thereby maintain an accurate control of the composition of the finished product. Different forms of the same substance such as rutile and anatase phases of titanium dioxide can be differentiated. Various forms of silica dusts which lead to silicosis can be distinguished. X-Ray diffraction yields valuable information in the manufacture of phosphors. For example, this spectrometer can quickly measure as little as 0.5 percent of manganese activator added to zinc orthosilicate phosphor. Specifications — Controls: Make control circuit breaker provides overload protection; separate high tension control helps to preserve tube life. High tension and Filament Transformers — completely oil insulated, designed for good voltage regulation. High tension connection to tube is established through two shock-proof cables, eliminating all exposed high voltage parts. Stabilizer — built-in 120 volt-over-all voltage. Spectrometer includes precision analyzing arc, graduated 0-90 degrees with Vernier reading to 0.01 of a degree. Geared specimen rotating mechanism provided with (a) quickly replaceable precision locking specimen holder, (b) X-Ray shutter and adjustable slit assembly with adjustable beam height slit and (c) Geiger-Counter tube housing with positioning adjustments and adjustable slit system. X-Ray Power supply designed for operation of 110-120 volts, 60 cycle, ac. Complete specifications for spectrometer proper, transformers, stabilizer, scaling unit, power supply, frequency meter. Geiger unit and x-ray tube are contained in bulletin available on request.

NORTH AMERICAN PHILIPS CO., INC., Dept. CP,  
100 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A965 — see information request blank, pgs. 2-3

### Selection of Instrument Transformers

A fifty-six-page booklet, "Instrument Transformer Accuracy Standards," has recently been issued. It is a two-part booklet. The first part explains the ASA accuracy standards for potential and current transformers and shows how they differ from the NEMA standards. Several tables and graphs simplify the use of Part 1 in respect to classifying transformers for accuracy, evaluating the effects of transformer errors on meter readings, and explaining the significance of accuracy classes and burdens. The second part of the booklet consists primarily of a handy guide for the selection from a complete line of standard indoor and outdoor current and potential transformers. It contains approximately 60 illustrations of the transformers with prices, ratings, and ASA and NEMA accuracy classifications for each type. Complete information on the selection of instrument transformers is available in this well illustrated booklet, GEA-4240, available upon request.

GENERAL ELEC. CO., Dept. CP, Schenectady 5, N. Y.

When inquiring specify CP A960 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945



## How cold is 320° below?

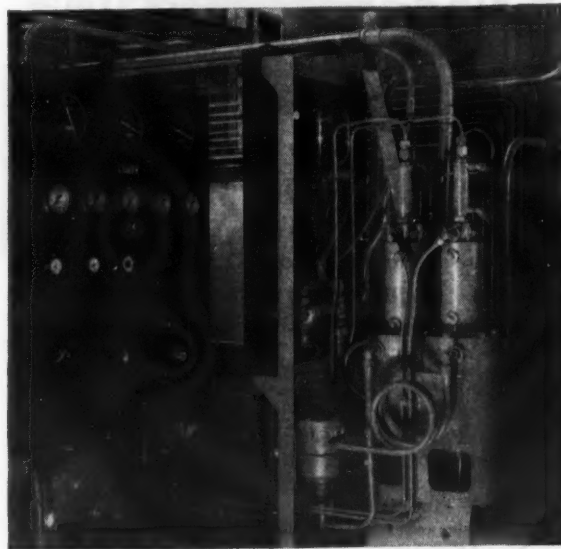
**W**HAT'S it like at  $-320^{\circ}\text{F}$ ? And how do you measure it *accurately* under severe field conditions?

This was a question that had never come up until we were handed a neat little problem by Clark Bros. Co. and the M. W. Kellogg Co. in connection with a highly important piece of U. S. Army equipment, the purpose of which cannot be disclosed. It was an interesting challenge. Nevertheless, our long experience in designing tube systems to meet the unusual demands of industry permitted us to take the job

in our stride. To be sure, it took some "doing" to provide the necessary over-range protection to withstand atmospheric temperatures as high as  $150^{\circ}\text{F}$ . when not in service; to produce the calibrating equipment; and to determine which metals would perform safely when exposed to such low temperatures.

Not all of our work is this spectacular. But the point we wish to make is that this particular job is another interesting, and entirely practical, application of tube system type instruments, and the versatility of Taylor Engineers.

Whether you want to plumb the depths of unexplored low temperatures—or measure or control any temperatures from there on up to  $1000^{\circ}\text{F}$ .—you can depend on Taylor capillary type thermal elements. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.



BUY MORE WAR BONDS — AND KEEP 'EM



When inquiring specify CP A967 . . . see information request blank, pgs. 2-3

# MARSH

"THE STANDARD OF ACCURACY"

*This isn't just  
our own appraisal!*

For many years this expression has been associated with Marsh Gauges and Dial Thermometers.

We call it an expression, rather than a slogan, because slogans are trumped up. This expression simply came up. We enclose it in quotation marks because it expresses the feeling of hundreds of users toward Marsh instruments. Marsh instruments have become the standard of comparison; Marsh is "the standard of accuracy".

When a product reaches such a position, few people ask how it got there. But if you ever take the trouble to check back over the many years during which Marsh has been making gauges, you will find that there is no mystery about it.

You will find that Jas. P. Marsh Corporation has not only shown the way in big developments, but has always given more attention to the small details . . . that count most. You will find, moreover, that this fidelity of detail is not confined to the more expensive instruments, but is common to all Marsh equipment in relation to the service for which it is built.

Why settle for less than the instruments that set the standard?

JAS. P. MARSH CORPORATION  
2095 Southport Avenue, Chicago 14, Illinois



THE GAUGE  
WITH THE  
"RECALIBRATOR"

A gauge built to Marsh Standards is not likely to be knocked out of adjustment. But if it is, the Marsh "Recalibrator" will quickly restore its accuracy. Simply turn the "Recalibrator" screw until the pointer is at zero when not under pressure. The gauge will then be right at all points on the dial. Unlike other methods of resetting, the "Recalibrator" gets at the root of the error—re-establishes the relation of bourdon tube to movement—actually recalibrates the gauge.

## INSTRUMENTS

### Electronic Automatic Controls

*Recording and indicating models for temperature, pressure, liquid level and humidity*

**Uses** — Automatic control of temperature, pressure, liquid level, humidity.

**Description** — Recording and indicating models are available. Temperature models in ranges  $-125^{\circ}\text{F}$  to  $+1000^{\circ}\text{F}$  for use in conjunction with motor and solenoid valves, relays, etc. in controlling ovens, dryers and tanks. Pressure instruments in ranges from full vacuum to 600 psi and also for liquid level use. Humidity controller operates from wet and dry bulb type element with separate control for each bulb. The free vane electronic controller is also offered as a time program controller for definite time schedules. Controllers operate on shielding of a vane passing between two coils in an electronic circuit. Control operation types available: low-open, high-open, low-high, low-open-high and low-normal high. Bulletin B220.

THE BRISTOL CO., Dept. CP, Waterbury 91, Conn.

When inquiring specify CP A989 — see information request blank, pgs. 2-3

### Multi-Contact Timer for Remote Control of Machine Operations

*Controls series of operations in definite order*

**Uses** — To control a series of machine operations in a definite order; alternately reverse or alternate in operation a group of motors, machines or devices; to operate in a predetermined sequence a series of signals, valves or sole-

*A fast, practical, scientific  
PRE-TEST FOR  
WEAR RESISTANCE*

The TABER ABRASER  
gives "Advance Data"  
on the Wearability of  
PAINTS · LACQUER · PLATING  
LEATHER · RUBBER · PAPER, ETC.

In checking the wearability of your own products as compared with competitors', as well as in research on new developments—the Taber Abraser gives you an accurate rating of resistance to surface abrasion quickly, simply. Eliminates slow, costly performance tests. Used by hundreds of manufacturers and research laboratories. . . . Full particulars on the Taber wear testing procedure will be sent on request. No obligation.

TABER INSTRUMENT CORPORATION  
111CP Gundry Street North Tonawanda, N. Y.

The Taber Test Proves What Wears Best!

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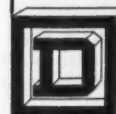
Industrial Multi-breaker,  
2 or 3 pole, 15 to 100  
amp., common trip, quick  
make and quick break.

## MULTI-BREAKER<sub>5</sub>

### FOR HAZARDOUS LOCATIONS

• Square D has broadened its line of cast explosion-proof Multi-breakers—in pace with current wartime requirements • In shell loading, powder, processing and synthetic rubber plants—wherever explosion and fire hazards exist, these Multi-breakers afford low-cost circuit breaker protection • All Class I, Group D enclosures are tested individually at 450 pounds hydrostatic pressure—an added assurance of their strength and stamina on the job. The line also includes enclosures for Class II, Group G locations.

Write for descriptive bulletin. Address Square D Company,  
6060 Rivard St., Detroit 11, Michigan



SQUARE D COMPANY

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## IS THE PRESSURE ON YOUR LABORATORY?

A  
DESPATCH  
OVEN  
offers . . .

- greater speed
- accurate testing
- assured dependability

RUN MORE  
TESTS PER DAY  
with a  
DESPATCH  
OVEN

Reconversion research is easier with a fast dependable oven like this.

Its uniform, fastflow forced draft system and automatic heat control ( $\pm 1^{\circ}\text{C}$ . sensitivity) lets you run more tests per day. And consistent accuracy is assured over entire heat range, to  $260^{\circ}\text{C}$ . Sizes:  $13" \times 13" \times 13"$  to  $37" \times 25" \times 37"$ ; electric.

WRITE for attractive Bulletin 105-CP.

**DESPATCH**  
OVEN COMPANY MINNEAPOLIS 14  
MINNESOTA, U.S.A.

SEE YOUR LOCAL DEALER

When inquiring specify CP A972 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When inquiring specify CP A968 — see information request blank, pgs. 2-3



## INSTRUMENTS

oids, as well as numerous other applications where sequence operations are of prime importance.

**Description** — Its solenoid starting mechanism is operated from a remote control momentary start button, so that the timer will go through its complete cycle or any part of its cycle of operation and stop. Reclosing the momentary start button will either continue or repeat the cycle as the case may be. They can be arranged so that in event of power interruption it is necessary to again press the remote control start button to continue the cycle, or after power is restored to automatically continue the cycle of operation.

R. W. CRAMER CO., INC., Dept. CP, Centerbrook, Conn.

When inquiring specify CP A973 — see information request blank, pgs. 2-3

### Portable Tester For Comparison Of Ferrous Materials

*For findings as to analysis and heat-treatment; 80% of two type iron-steel mixtures sorted*

**Uses** — Simple comparison of ferrous materials as to analysis and heat treatment.

**Description** — This instrument, known as the "Ferrograph,"

utilizes transformer principle of operation. A 23 cycle exciting current is fed into the primary coil while the output of the secondary

is controlled by the magnetic characteristics of a metal sample introduced into the coil. The voltage from the secondary is filtered and the fundamental 23-cycle wave is impressed on the horizontal axis of the cathode ray tube. The third harmonic is viewed on the vertical axis of the instrument. The first and third harmonics will vary in phase and amplitude with variations in the analysis and heat treatment of steel and iron. Sorting of commonly used SAE steels is quite practical although in some cases the difference obtained is very small and may not be sufficient for sorting production lots of parts. About 80% of the mixtures of two types of iron or steel that can occur, can be successfully sorted. The low frequency exciting current has an advantage over the use of 60 cycle in that the reversals of magnetizing flux are slow enough to give some appreciable effect from residual magnetism. A long-persistence screen is used in the cathode-ray tube to avoid flicker from the low frequency used. A relay turns the cathode beam off automatically unless there is a sample in the test coil. The flux in the test coil can be varied widely. It is possible to correlate with different variables by using different flux densities in the Ferrograph coil. Calibrated scale provides ten divisions per inch, with the tenth division accentuated. Operation on 115 volts, 40-60 cycles. Dimensions inches: 12½ w., 17¼ h., 23¾ d., weight 100 lbs.



PORTABLE METAL TESTER



### BETTER RESULTS FOR EVERY LABORATORY TECHNICIAN

Here are laboratory furnaces incorporating the latest engineering principles to give easier and more precise results in testing and analyses.

The Lindberg Box Furnace illustrated is designed for operating temperatures up to 2000° F. for chemical analyses and metallurgical tests. The two-purpose Pot Furnace is for use with crucibles as well as for immersion heat treating and has a working temperature up to 2000° F. The Combustion Tube Furnace for fast carbon and sulphur determinations heats up to 2500° F.

Your laboratory equipment dealer will give you complete information about Lindberg Laboratory Furnaces. Call him today and learn how these modern, economical, precise furnaces can benefit you.

LINDBERG ENGINEERING COMPANY  
2450 WEST HUBBARD STREET • CHICAGO 12, ILLINOIS

# LINDBERG

WELL KNOWN THROUGHOUT THE WORLD AS  
LEADERS IN DEVELOPING AND MANUFACTURING  
INDUSTRIAL HEAT TREATING EQUIPMENT

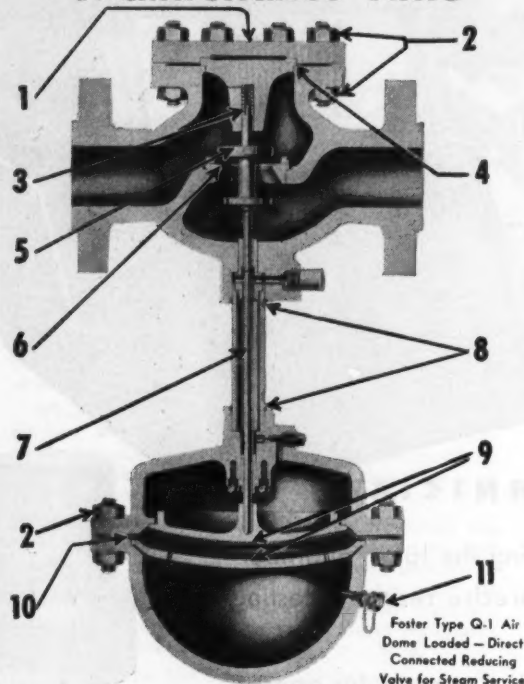
SOLD EXCLUSIVELY THROUGH LABORATORY EQUIPMENT DEALERS

When inquiring specify CP A974 — see information request blank, pgs. 2-3

When inquiring specify CP A975 . . . see information request blank, pgs. 2-3

# FOSTER REGULATION ENGINEERING

## Saves Maintenance Time



- |   |   |
|---|---|
| 1 Major overhaul, when necessary, without breaking the line | 6 Main valve seat ring replaceable                                |
| 2 All bolts are stud bolts—easily loosened                  | 7 Pushrod removed from lower end                                  |
| 3 Guide and spring easily replaced                          | 8 Braze—no packing required                                       |
| 4 Ground joint—no gasket required                           | 9 All smooth contact surfaces for diaphragm                       |
| 5 Main valve accessible—easily re-seated                    | 10 Diaphragm unit can be removed without disturbing rest of valve |
| 11 Air fitting replaceable                                  |   |

Foster Regulation Engineering, built into each valve, is your assurance of years of accurate trouble free operation.

**FOSTER ENGINEERING**  
124 MONROE STREET, NEWARK, N. J. *Company*

1-FE-5

When Inquiring specify CP A976 — see information request blank, pgs. 2-3

## INSTRUMENTS

### Improved Coil Insulation With Vacuum and Pressure

*Costs no more than dipping; insulation effective to very center*

*Uses* — Vacuum impregnation of coils, armatures, transformers, followed by impregnating under pressure.

*Features* — Costs no more than dipping. Insulation material is suited to each individual type of work. Insulation effective to very center.

*Description* — Among results shown in addition to more efficient insulation are: higher sustained voltages without overload; elimination of wear due to creeping coils; prevention of insulation charring; protection of wire from vibration; permanent filling of spaces; maintenance of coil coolness; coils rendered moisture proof; protection of windings from electrolysis. Further details on request.

VACUUM IMPREGNATING WORKS, Dept. CP, 638 S. Federal St., Chicago, Ill.

When Inquiring specify CP A977 — see information request blank, pgs. 2-3

### Material Level Indicator

Material bin level indicator is illustrated and described in four page folder. The indicator is employed to control conveyor, valve circuits, etc., to give audible or visible warnings when material reaches or falls below a certain level. The indicator is positive in operation. The necessity for relays has been eliminated, as the switches are held in the desired position when the material is above or below level. When the level of the material arrests rota-

## INTERCHANGEABILITY

Easy to change  
from one service  
to another  
without  
changing  
metering tube



Write for a copy  
of Publication  
No. 4135

COCHRANE CORP., 3147 N. 17th St., Phila. 32, Pa.

**COCHRANE-ROTAMETERS**  
**ROTAMETERS**

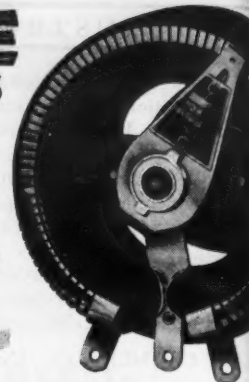
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## OHMITE RHEOSTATS

FIRST IN QUALITY

FIRST IN RANGE

FIRST IN QUANTITY



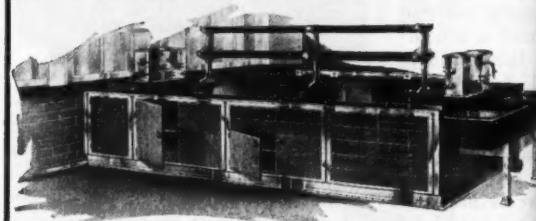
● Ohmite design features assure permanently smooth, gradual, close control under the most severe operating conditions. 10 wattage sizes range from 25 to 1000 watts, from 1 1/8" to 12" diameter, in a wide range of resistance values. As a result—Ohmite has produced more power rheostats for war industries than any other manufacturer.

Write on company letterhead for Industrial Catalog and Engineering Manual No. 40.

**OHMITE MANUFACTURING COMPANY**  
4917 FLOURNOY STREET • CHICAGO 44, ILL.

*Be Right with OHMITE*  
RHEOSTATS • RESISTORS • TAP SWITCHES

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## Your Technicians Deserve the Best in Laboratory Furniture

● Every piece of Kewaunee Laboratory Furniture incorporates time-saving conveniences and working advantages developed by Kewaunee Engineers through nearly 40 years of close cooperation with America's leading Laboratory Technicians.

### Yours Without Extra Cost!

● The Kewaunee "Cut-Cost System" of Unit Assembly gives your Laboratories a smart streamlined appearance, permits graceful expansion as needed and lowers the cost of equipping with the best in Laboratory Furniture, Cases and Cabinet Work. Address —

INDUSTRIAL DIVISION

*Kewaunee Mfg. Co.*  
LABORATORY FURNITURE EXPERTS

C. G. CAMPBELL, President

5011 S. Center St.,

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## INSTRUMENTS

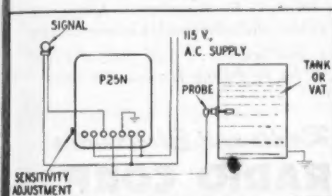
tion of the paddle, the motor stator or shell, is driven backward about the axis of the shaft and actuates the switch mechanism. As the interval between the time when rotation of the paddle is arrested and the switches are actuated is adjustable to provide a lag, (for any interval up to 10 seconds) the switch mechanism is not effected by a momentary surge of material, or by the settling of an erated, pulverized material. The principle working parts of this apparatus are totally enclosed in a dust tight casing, which rests upon the bin cover, and a paddle suspended in the bin at the desired level. The paddle supporting shaft is generally driven continuously at 1 rpm by a synchronous motor.

FULLER COMPANY, Dept. CP, Catasauqua, Penna.

When inquiring specify CP A981 — see information request blank, pgs. 2-3

### Electronic Liquid Controller

Used where changes in concentration accompany relative changes in electrical conductivity



CONTROL... typical installation

tions in which changes in concentration are accompanied by a corresponding change in electrical conductivity.

**Features** — Installation quickly and easily made, requiring only that probe fitting be mounted and probe extend into liquid. Voltage applied to probe never exceeds 25 volts, thereby eliminating any possibility of electric shock or explosion hazard.

**Description** — The probe is wired to the electronic control which may be located wherever desired. The control may be used to maintain an interface between two liquids differing even slightly in conductivity. Sensitivity range 100-5,000 ohms operating on a 5% change in probe-circuit resistance. Instrument incorporates a single-pole, double-throw relay, rated at 10 amperes A. C., 5 amperes, D. C. for normally closed and normally open operation and requires a supply of 115 volts A. C. 60 cycles. A typical application is the detection of leakage in coils containing acid electrolyte, the coils being heated by condensate.

PHOTOSWITCH, INC., Dept. CP, 77 Broadway, Cambridge 42, Massachusetts.

When inquiring specify CP A982 — see information request blank, pgs. 2-3

### Control Equipment For Water Works, Sewage Disposal and Industry

A wide line of control equipment for water, sewage and industrial application is offered in forty page catalog comprised of various bulletins all assembled in handy loose-leaf folder. The controls include (1) Elevated tank controls for controlling remote and nearby elevated tanks by pressure; (2) Hydro-Pneumatic Systems, (Pressure Tanks) for automatic control of both air and water volume; (3) Float Operated Controls for Water and Sewage Installation; (4) Float Switches — Pump Controls for Tanks and Sumps; (5) Single Float, multiple circuit, sequence controls for open tanks and sumps and (6) Accessories.

AUTOMATIC CONTROL CO., Dept. CP, 1005 University Ave., St. Paul 4, Minn.

When inquiring specify CP A983 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

# SARGENT

## ELECTRIC DRYING OVEN

• Thousands of these ovens are now in use, giving dependable service. Such universal acceptance over a period of many years grew out of the satisfaction of users with the oven's durability, its dependable heating and regulating system, long service life of heating elements, and its safety features.

Heat is delivered from five elements distributed across the oven floor. The circuit is so designed as to deliver laterally balanced distribution of heat at all temperatures. A three point multiple switch prevents excessive overheating and overloading of contact points by permitting adjustment of base heat to the lowest quantity needed for any selected operating temperature. Temperature regulation is accomplished by a bimetallic controller of extreme simplicity, assuring regulation within an average variation of 1° C. Not more than 3 amperes are carried by regulator contacts.

Fast heat transfer with resultant quick drying is accelerated by inlets at the bottom provided with shutters and four outlet holes in the top. Temperature range with good regulation, up to 180° C. Higher temperatures available with slight loss in accuracy of regulation.

Emphasis on strength and durability in the construction is typified by such details as the welded frame, double insulated door and heavy gauge metal work used throughout the body of the oven.

#### Specifications

Inside dimensions of working chamber 10 inches high, 12 inches wide, 10 inches deep. Outside overall 17½ inches high, 13½ inches wide, 13 inches deep. Maximum power input 900 watts.

Furnished complete with two perforated shelves, thermometer having a range of minus 10° to plus 200° C. in 1° subdivisions, pilot light, cord and plug.

S-63995, for 115 volts.....\$37.50  
S-64005, for 230 volts..... 38.50

E. H. SARGENT & COMPANY, 155-165 E. SUPERIOR ST., CHICAGO 11, ILL.

Michigan Division: 1959 East Jefferson, Detroit 7, Michigan

# SARGENT

SCIENTIFIC LABORATORY SUPPLIES

When inquiring specify CP A984 . . . see information request blank, pgs. 2-3

AND **NOW** THE

# MERIAM

## MICROMANOMETER

FOR

*Checking  
AND  
Calibrating  
INSTRUMENTS*

• This new, efficient instrument is used mainly for calibrating low pressure instruments and other devices. It can be employed also as a conventional manometer for reading pressures or vacuums.

Highly sensitive, the Meriam Micromanometer permits readings to plus or minus .001" water pressure. Most rugged, and unequalled in simplicity. Not the least complicated or mysterious, it can be handled successfully by the average operator.

Ask for Bulletin 25

### THE MERIAM INSTRUMENT CO.

10940 Madison Avenue  
Cleveland 2, Ohio

Patent Applied For  
02.02

# MERIAM

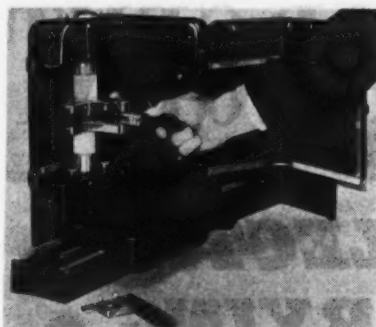
★ *Instruments* ★

ESTABLISHED 1911

## INSTRUMENTS

### Arc Stand For General Work, Metal Rod, Plate Analysis

*Universal model has unique friction drive for positioning and positive holder for flat specimen, stand made from aluminum castings*



STAND including jigs, rotary table

**Features** — Unit completely enclosed, door being furnished with a safety switch to obviate the hazard of shock and dark red transparent plastic panel. Unique friction drives for positioning electrodes provides smooth operation, accurate adjustment. Positive sample holder exerts spring tension against the top of flat specimen for perfect electrical contact, irrespective of the condition of the sparking surface.

**Description** — The stand is ruggedly constructed from

*Uses* — As a universal arc-spark stand combining the desirable features of the conventional stand used in general arc work, of the jig-loaded stand used for metal rod analysis, and of the Petrey stand used for metal plate analysis.



We do not sing his praises to the sky

but we know it takes loyal and faithful workers like BOB, on the job always, graduating these precision industrial metal scales with skill and care for much depends upon this single operation.

In your post-war planning, remember only GOOD thermometers do the job right.

And PALMER Thermometers give you:

1. Precision and Guaranteed Accuracy
2. Sturdiness and Long Service
3. A bright RED column . . . so easy to see with "Red-Reading-Mercury".

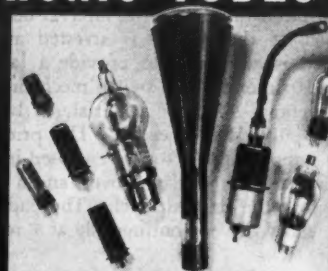
### THE PALMER CO., Mfrs.

Industrial, Laboratory, Dial & Recording Thermometers  
2519 Norwood Ave., Cincinnati, Norwood, O.—Canadian Plant: King & George Sts.  
Toronto

When Inquiring specify CP A986 — see information request blank, pgs. 2-3

## All Types of Industrial ELECTRONIC TUBES

RECTIFIER  
POWER  
CONTROL  
PHOTO-ELECTRIC  
TRANSMITTING  
RECEIVING



STOCKS ON HAND FOR  
*Immediate Delivery*

Helpful  
**BUYING  
GUIDE**  
Available  
on Request  
Write for it!

Take advantage of this complete, centralized service on all types of industrial electronic tubes. Many are "on-hand" for rush delivery! RCA, G.E., Raytheon, Amperex, Eimac, Taylor, and other well known makes. Save time and work . . . Call Allied First! Write, Wire or Phone Haymarket 6800

*Everything in Radio and Electronics*

### ALLIED RADIO CORP.

833 W. Jackson Blvd., Dept. 17-A-5, Chicago 7

When Inquiring specify CP A987 — see information request blank, pgs. 2-3



# Paragon

*your Top Source  
of TIME CONTROLS!*

Mr. Top, the Paragon  
symbol of top quality



300 Series



800 Series

Automatic time controls are speeding production . . . multiplying manpower efficiency . . . and saving countless hours in thousands of plants in scores of industries. Submit your timing problem to Paragon . . . your top source of time switches and controls.

**ONLY \$13.00 LIST . . .** 300 Series self-lubricating time switches are accurate and durable for controlling stokers, oil burners, blowers, pumps, valves, air conditioning, etc. America's leading time switch value.

**TIME DELAY RELAYS . . .** the time cycle of Paragon synchronous motor operated, instantaneous reset type relays is unaffected by vibration or changes in ambient temperature. For motor and tube protection.

**7-DAY TIME SWITCHES . . .** are designed for presetting heating or ventilating schedules on a weekly basis with independent daily operations.

**MANUALLY PRESET TIMERS . . .** the 3500 Series is designed to close or open a circuit at the end of a preset interval, such as attic fan control.

All these units are designed and built by Paragon . . . pioneer in the automatic timing field. Send for complete bulletin.

# Paragon

PARAGON ELECTRIC  
COMPANY  
720 Old Colony Bldg.  
Chicago 3, Illinois

When Inquiring specify CP A988 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When Inquiring specify CP A985 — see information request blank, pgs. 2-3



## INSTRUMENTS

large aluminum castings. Massive steel electrodes are water cooled, specially insulated tubing on water system prevents power leakage or breakdown even when used with high voltage spark units. Friction drive provides a one inch continuous travel for both upper and lower holders. For use as a jig loaded stand, the holders are locked in place and an accompanying jig is used for spacing the sample rods. Additional jig may be used for spacing rod carbon electrodes for arc work. The instrument is easily converted to use with flat specimens. Overall dimensions of the unit are 9 x 14 x 8 inches.

HARRY W. DIETERT CO., Dept. CP, 9330 Roselawn Ave., Detroit 4, Mich.

When inquiring specify CP A989 — see information request blank, pgs. 2-3

### Rotameter Flow Ratio Controller

*Two flows automatically proportioned at any desired ratio*

**Uses** — For ratio flow control where it is desired to keep one flow at a fixed percentage of a second variable flow. **Features** — This ratio flow controller performs the operation automatically and ratio may be varied at will by a turn of the flow ratio button.

**Description** — Two rotameters with electric transmissions for remote readings are placed in the respective flow streams. The remote flow-responsive balance beams from these two rotameters are placed back to back and connected by a cross beam. From this cross beam is suspended an arm whose position may be changed at will by sliding it on the beam. This suspension arm is connected to a Rotamatic air-operated control mechanism, which in turn transmits air pressure to an air-operated control valve in the flow line of the stream which is to be maintained at a fixed percentage of the main flow. Thus, the position of the arm suspended on the cross beam determines the flow ratio of one stream to the other. The ratio may be readily maintained at any point from 1/5 to one up to as high as 5 to 1 by just moving the ratio index button. Liquid flows from 1 GPM up to 6,000 GPM may be proportioned, and gas flows in equivalent volumes. The full and interesting details in regard to the Rotamatic Ratio Controller are told in Bulletin 50-A which will be sent to you on request.

FISCHER & PORTER CO., Dept. CP, 944 County Line Road, Hatboro, Penna.

When inquiring specify CP A990 — see information request blank, pgs. 2-3



ROTAMETERS back to back, connected by cross beam

## For the First Time . . .

### SMALL CAPACITY CONTROL VALVES

*with Wide Range Percentage Flow Characteristics*

## MASONEILAN *Percentage Piston* CONTROL VALVES

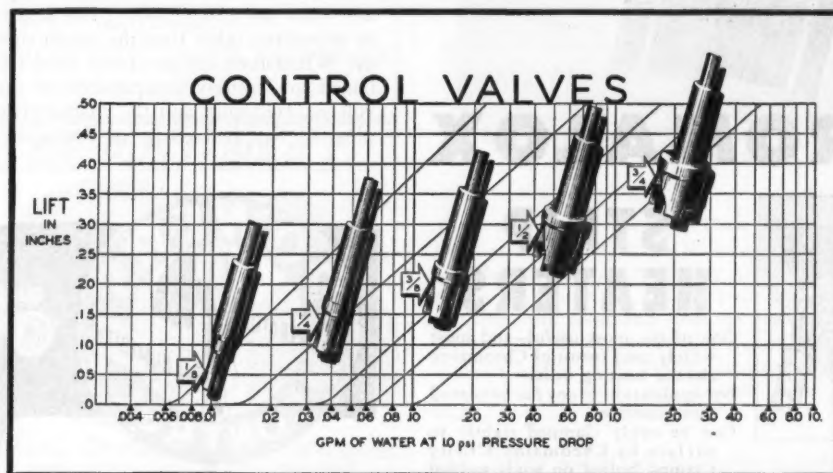
In the past, valve manufacturers neglected to design and build small control valves which had minimum flow capacities very small in comparison to their maximum flow capacities. Consequently, all that has been available has been needle and wedge type valves.

Through exhaustive study, research and test, Mason-Neilan Engineering dispelled this bug-a-boo by designing a new series of small valves that provide exceptionally good flow character-

istics. These valves are known as *Percentage Piston Control Valves* and are obtainable in five trim sizes —  $\frac{3}{4}$ ",  $\frac{1}{2}$ ",  $\frac{3}{8}$ ",  $\frac{1}{4}$ " and  $\frac{1}{8}$ ".

The important point of these valves is that a wide flow range with desirable reproducible characteristics has been obtained in all sizes including the  $\frac{1}{8}$ ".

Investigate these new Masoneilan Percentage Piston Control Valves. Write for complete information and Bulletin 300 today.



### FEATURES

- A family of five trim sizes —  $\frac{3}{8}$ ",  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ " and  $\frac{3}{4}$ ".
- The ports on all size plugs are milled in special fixtures for accuracy and reproducibility.
- Special design of the plug and the seat ring permits excellent flow characteristics over flow ranges of the same magnitudes obtained in larger valves.
- High Lift — All sizes have a  $\frac{1}{2}$ " lift.
- The orifice diameter purposely has been held to a minimum to reduce the erosive effect of high

velocity fluids and to reduce the leakage flow when operating near the seat.

- Single seated design insures tight shut-off.

- The extra large standard diaphragm motor used with this series of valves has an effective area of 46 square inches. This in combination with the high lift gives an exceptionally responsive unit.

- In addition to the standard air-to-close superstructure, a new simplified superstructure is available for air-to-open action.

- Trim size is interchangeable and conversion is accomplished by merely replacing the plug and seat ring.

- Standard trim is type 304 (18-8) stainless steel. Hardened stainless steel, bronze, monel or other special metals are also available.

- Body materials — Bronze, cast iron, cast steel, forged steel or alloy steel are standard.

- Body design — Globe or angle type bodies, tapped  $\frac{1}{2}$ ",  $\frac{3}{4}$ " or 1" are standard.



### MASON-NEILAN REGULATOR COMPANY

1203 Adams Street, Boston 24, Mass., U. S. A.

New York Philadelphia Pittsburgh Toledo Chicago Tulsa Atlanta St. Louis Houston  
Los Angeles San Francisco Mason Regulator Co. of Canada, Ltd., Montreal, Canada

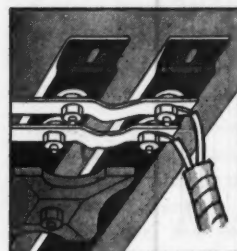
When inquiring specify CP A991 . . . see information request blank, pgs. 2-3



**Heat it**  
*Electrically*

with

**CHROMALOX**



## STRIP HEATERS

One of the most useful—and most widely used forms of Chromalox electric heating units—

For application to any flat or curved metal surface—

Can be easily clamped tightly to surface by Chromalox Utility Clamps, bolted on studs welded to surface—

The easy, convenient, safe way to heat almost anything—

No gas fumes, no steam piping troubles, no flame hazard—

Nothing but good, *clean* electric heat, hot where you want it, and nowhere else—

Temperature as you want it, uniformly maintained by thermostats—

Surprisingly economical in operation (check on this—it may surprise you)—

Made in many lengths, up to 95 inches. All described in the Chromalox Catalog 42, on request.

### READ

#### "100 WAYS TO APPLY ELECTRIC HEAT"

24 pages of practical pictures showing the right way to apply electric heating units for all industrial purposes. Write for your copy.



**EDWIN L. WIEGAND COMPANY**  
7517 Thomas Blvd., Pittsburgh 8, Pa.

**CHROMALOX** means  
ELECTRIC HEAT AT ITS BEST

## INSTRUMENTS

### Conductivity Bridge in Standard and Special Scale Models

*For testing distilled water, alkali solutions, steam condensate, acids, free caustic content in air scrubbing towers*

**Uses** — This electrolyte bridge adapted for direct measurement of the concentration of solutions for many different types.

**Features** — Simple, economical and easily used by operators not possessing special training. The "Solu-Bridge" is completely self-contained in attractive metal case outside dimensions being only  $6\frac{3}{4} \times 5 \times 2\frac{3}{8}$  inches.

**Description** — Models are available with scales showing directly the free caustic content of alkali washing solutions as used in the bottle washing and metal degreasing services; in metal working plants; in breweries, dairies, beverage plants. Other models are available with calibrations suitable for testing distilled water and tap water. These standard models can be used for testing of concentration of electrolytic solutions of all types by the use of a simple correlating factor to correct for the differences in conductivities of the different electrolytes. The instrument operates from the 110 v., 60 c., line and requires no batteries or accessories other than the conductivity line. Because of the Wheatstone bridge circuit used the measurements obtained are entirely independent of variations in the line voltage, frequency and the characteristics of the tubes employed. Supplied ready for immediate operation. Folder



### Precise Control of **TEMPERATURES** with H-B THERMO-REGULATORS and THERMOSTATS...

H-B Thermostats and Red Top Thermo-Regulator (adjustable thermostats) are used extensively in both laboratory and production equipment. Ranges of application are from minus 30 to plus 350° F. and both straight and angle types are available. Temperatures can be maintained with these instruments to an accuracy of a fraction of a degree. Many shapes and sizes now available for shipment, and single units or quantities lots can be furnished. Write for circular. H-B Instrument Company, 2510 N. Broad St., Phila. 32, Pa.



When inquiring specify CP A994 — see information request blank, pgs. 2-3

When you want accurate and dependable automatic temperature or humidity control for Industrial Processes or Air Conditioning Systems call in a Powers engineer. With a very complete line of self-operating and compressed air operated controls we are well equipped to fill your requirements.

**Write for Circular 2520**

**THE POWERS REGULATOR CO.**  
2756 Greenview Avenue, CHICAGO

Offices in 47 Cities—See your phone directory

**50 Years** of Temperature and Humidity Control

When inquiring specify CP A993 — see information request blank, pgs. 2-3

**CLASS 9049**

**The Class 9049 Mechanical Alternator** provides a simple and positive means of mechanically alternating the operation of two condensate pumps in a duplex system. The function of the device is to provide alternate cycles of operation to assure even wear of the pumping units in such a system. It thus eliminates the evils of long standby for one of the two pumping units. The Class 9049 device further provides the additional function of starting the "second" pump in cases where extra capacity under peak conditions is required. For bulletin, address Regulator Division, Square D Company, 6060 Rivard St., Detroit 11, Michigan.

#### ELECTRICAL RATINGS

Voltage	Single Phase A.C.	Polyphase A.C.	D. C.
110V.	1 H. P.	2 H. P.	$\frac{1}{2}$ H. P.
220V.	2 H. P.	3 H. P.	$\frac{1}{2}$ H. P.
550V.	2 H. P.	3 H. P.	.....
32V.	.....	.....	$\frac{1}{4}$ H. P.

**SQUARE D COMPANY**  
DETROIT • MILWAUKEE • LOS ANGELES

When inquiring specify CP A995 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When inquiring specify CP A992 — see information request blank, pgs. 2-3



## Re-usable Permocharts Increase Efficiency of Recording Instruments



★ Permocharts—flexible and waterproof instrument-recording charts made of washable plastic—make industrial control more accurate, more efficient, more simple, and less costly.

In the long run, Permocharts cost less than paper charts (about one-fifth as much). Centers are reinforced with plastic washers to prevent deterioration from re-use. There are sizes available for any recording instrument which uses circular charts.

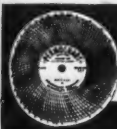
Re-usable Permocharts are available in white and three I-EZ colors—green, ivory, and blue; they are guaranteed for two years continuous service.

PRICE RANGES (F. O. B. Sewickley, Pennsylvania)

Up to 8"—\$1.50 each; up to 10"—\$2.00 each; up to 12"—\$2.50 each. Ink—2 oz. 70¢; 8 oz. \$2.00

Minimum Order—3 Charts

Write for Literature and Quantity Discounts

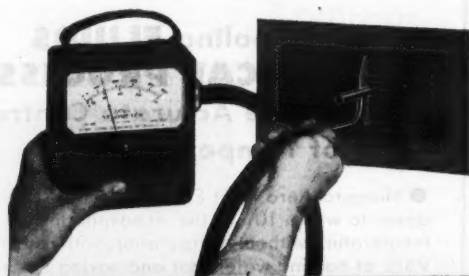


**PERMOCHART** Company

545 CHESTER ROAD

SEWICKLEY, PENNSYLVANIA

When inquiring specify CP A996—see information request blank, pgs. 2-3



**Alnor VELOMETER**

**the direct reading  
air velocity meter**

Air speed in feet per minute is read directly and instantly on the scale of the Alnor Velometer. Anyone can use this simple instrument—there are no calculations, no leveling, no timing, and no conversion tables. This convenient instrument allows quick checking of draft, leaks, velocities at air conditioning outlets, and any other air movement. Quick, accurate air velocity measurements give a valuable check on efficiency of equipment.

The Velometer is made in several standard ranges from 20 fpm to 6000 fpm, and up to 3 inches total pressure. Special ranges available as low as 10 fpm and up to 25000 fpm velocity and 20 inches pressure. Write for bulletin with complete data.

**ILLINOIS TESTING LABORATORIES, INC.**  
420 NORTH LA SALLE STREET  
CHICAGO 10, ILLINOIS

When inquiring specify CP A997—see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

## INSTRUMENTS

giving complete specifications of models and cells, on request.

INDUSTRIAL INSTRUMENT, INC., Dept. CP, 156 Culver Ave., Jersey City, N. J.

When inquiring specify CP A998—see information request blank, pgs. 2-3

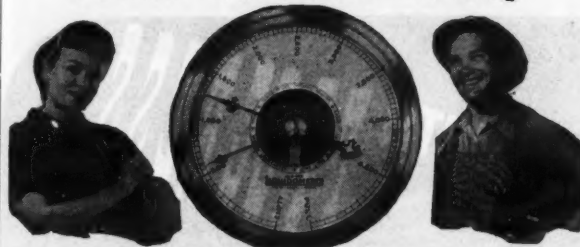
**Maintenance Instructions That Assure Clear,  
Legible, Chart Records**

Recent issue of publication of instrument manufacturer contains several articles of great practical interest to processing plants. The first of these is titled, "The Fundamentals of Automatic Control". A few of the headings and sub-headings are: "Principal Control Characteristic—Dead Time—Measuring Lag—Controller Lag," "Effect of Control Characteristics," "Proportional and Proportional Reset Control," "Applications of Automatic Control." The second discusses Pneumatic Time Pattern Controllers by means of which temperature is increased gradually to a certain high value, held at that value for a definite length of time and then decreased. The instrument's principle and construction is described with reference to actual applications such as pasteurizing beer, heating control in steel industry and crystallizing sugar, salts and other chemicals. A third gives highly detailed instructions emphasized by drawings for maintaining instruments so that clear legible chart records are obtained at all times. Issue is Volume 1—Number 3—Instrumentation.

THE BROWN INSTRUMENT CO., Dept. CP, Philadelphia 44, Pa.

When inquiring specify CP A999—see information request blank, pgs. 2-3

## TODAY OR POST-WAR!



*It Is Important to Measure Valuable  
Stored Liquids Accurately With—*

**LIQUIDOMETER Tank Gauges**

"THEY'RE ALWAYS DEPENDABLE"

100% automatic.

No pumps, valves, or auxiliary units needed to read them.

Models available for either remote or direct readings.

Accuracy unaffected by specific gravity of tank liquid.

Approved by Underwriters' Laboratories for gauging hazardous liquids.

Write for complete details.

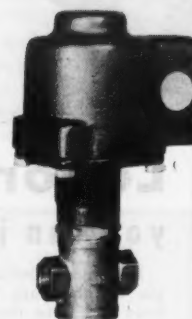
THE **LIQUIDOMETER** CORP.  
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CP A1000—see information request blank, pgs. 2-3

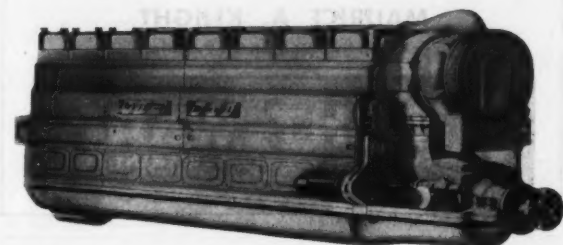
# An ASCO

## SOLENOID VALVE...

## ... guards this powerful



## Sterling Diesel Engine



Those who design and build Diesel Engines, such as Sterling Engine Company, Buffalo, N. Y., put reliability on an equal footing with efficiency for they are inexorably linked. Materials of construction are the best obtainable. Ample safety factors are employed. Ratings are conservative, yet with all the care they put into the design and construction, the Sterling people plan for the unexpected. They include a "safety valve" which automatically shuts down the engine should anything go wrong.

This "safety valve" on the Sterling Engine is an ASCO Solenoid Valve which will automatically cut-off the flow of fuel to the engine.

There are a great many applications for solenoid valves for safety shut-off service and for automatic and remote control. If you are interested in automatic control of the flow of liquids or gases, or of air or hydraulic cylinders, tell us your problem. Write in detail. We shall be glad to make complete recommendations.



★ ★ ★  
We also manufacture a quality line of Automatic Transfer Switches, Remote Control Switches, Contactors and Relays.

1-AS-1

## Automatic Switch Co.

47 East 11th Street New York 3, N. Y.

When inquiring specify CP A1001—see information request blank, pgs. 2-3



## Laboratory Pipe you can install and forget

If you are building a new laboratory, it will pay to use Knight-Ware pipe and fittings for your acid drain lines and fume ducts. Knight-Ware is really acid-proof, not just acid resistant. You can put it between walls and floors or bury it and forget about it.

Special fittings are readily made for difficult wall or floor situations. Available, too, are Knight-Ware laboratory sinks, table troughs, receptors and neutralizing sumps all custom built to your specifications. Write for a copy of Knight-Ware Laboratory Equipment catalog.

**MAURICE A. KNIGHT**

401 Kelly Ave., Akron 9, Ohio

**KNIGHT-WARE**  
CHEMICAL EQUIPMENT

When inquiring specify CP A1002 — see information request blank, pgs. 2-3

## INSTRUMENTS

### DC Motor Analyzer 1/2-600 HP

Also for generating, distributing equipment, controls



COMPACT TEST UNIT

has a self-contained range of 15-150-300-750 volts with a sensitivity of 200 ohms per volt. The self-contained ampere range of 7.5, 75, 750 amperes are available through the heavy all-metal binding posts located at top of panel. The ammeter has a separate 0-50 millivolt range which is available through external binding posts allowing the use of external shunts to provide additional amperage when desired. Case is durable wood 7 1/4 x 11 x 13 1/2 inches. COLE INSTRUMENT CO., Dept. CP, 1320 S. Grand Ave., Los Angeles, Cal.

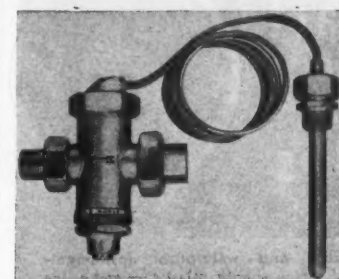
When inquiring specify CP A1004 — see information request blank, pgs. 2-3

**Uses** — Provides all the ranges necessary for testing DC motors from 1/2 to 600 HP; also industrial generating and distributing equipment and control devices.

**Features** — Complete unit is enclosed in compact, convenient light weight case.

**Description** — Accuracy of 1% of full scale value and a scale length of 3 1/2 inches. Instrument

## FUEL WASTE AVOIDED



**Production  
and  
Processing  
Efficiency  
Assured**

With this **STERLING No. 150 Control** . .

Here's a control designed to accurately maintain temperatures of cooking vats — any process in which temperatures depend upon a regulated flow of steam, water, gas. At the same time, a Sterling No. 150 Control **SAVES FUEL COSTS**. Applicable for pressures up to 125 lbs. and temperatures to 250° F.

Write for bulletin  
No. 402. Consult  
your jobber for  
prices and catalog.

**STERLING, Inc.**

3738 North Holton St.  
Milwaukee 12, Wisconsin

Manufacturers of Heating Pumps — Temperature  
Controls — Heating Specialties

When inquiring specify CP A1005 — see information request blank, pgs. 2-3

**KEEPING PACE**

Because Steelab is in the vanguard of scientific advancement, its timely designed laboratory equipment and furniture has consistently met the most rigid specifications—both in Peace and War. Steelab paces production in over ten thousand of America's leading industrial organizations—constructed by skilled specialists in the finest, most durable, fireproof materials, afford the triple protection of safety, permanence and economy in operation. Engineering consultants are available without obligation, to assure satisfactory fulfillment of your plans for the future.

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**LABORATORY FURNITURE COMPANY, INC.**  
37-22 NORTHERN BLVD., LONG ISLAND CITY, 1, N. Y.

**LABORATORY FURNITURE COMPANY, INC.**

When inquiring specify CP A1003 . . . see information request blank, pgs. 2-3

## For Cooling **FLUIDS** in **CHEMICAL PROCESSES** with More Accurate Control of Temperature . . .

● Niagara Aero Heat Exchanger cools liquids or gases to within 10° of the atmospheric wet bulb temperature without refrigeration, with a saving of 95% of cooling water cost and saving the equipment cost of cooling tower, piping and pumping. Niagara patented "Balanced Wet Bulb Control" holds fluid temperatures constant with properly controlled heating when needed to restore the minimum temperature.

NIAGARA AERO HEAT EXCHANGERS are successfully applied to liquid and gas chemicals and intermediates, many liquid products in process, baths of water, oils and solutions, hydraulic fluids, power equipment water-jackets, air and gas compressors, generators and condensers.

For complete information and performance records, address:

**NIAGARA BLOWER COMPANY**

25 Years of Service in Air Engineering

New York Address:

Dept. CP-15, 6 E. 45th St., New York 17, N. Y.

Field Engineering Offices in Principal Cities

When inquiring specify CP A1006 — see information request blank, pgs. 2-3



## INSTRUMENTS

### Electronic Control Solves Problem of Kiln Installation for Optical Glass & Pottery

Recent issue of publication of control manufacturer features illustrated article on pottery history and also tells how a large art gallery solved a problem in connection with a ceramic class. Use of a flame fire kiln would necessitate increased insurance rate and also alterations. Gas connections were not available inside building and oil required tank installation. Technical men were not available to control electric kiln over period of hours. A resistance type of electric furnace (Harper Elec. Furnace Corp.) and automatic program type electronic control. With the automatic program control, the kiln can be used day or night, or both, and can be set to operate during off-peak electric demand periods when there is a savings in electric rates. Part of the time the kiln is used in optical glass research and part in baking and glazing modelled clay objects. For bisque (clay) baking, the kiln is started at 100 and the heat increased over a curve until it reaches 1840 in 1 1/2 hrs. For glazing the heat is increased to 1960 over a longer period of time. A typical heat cycle for bisque firing is: 5:00 P.M. 100, 9:30 — 680, 10:00 — 800, 11:30 — 1240, 1:15 A.M. 1620, 2:30 — 1840. The starting, time temperature cycle and the stopping of the kiln are by means of the arm moving along edge of cam rotated by synchronous motor. Arm is mechanically coupled to instrument which electronically controls input to the resistance "Glowbars" in the kiln. The resistance units are located in the compartments at sides of furnace chamber so that there is no direct radiation. Copies on request.

WHEELCO INSTRUMENTS CO., Dept. CP, Harrison & Georgia St., Chicago 7, Ill.

When inquiring specify CP A1007 — see information request blank, pgs. 2-3

### Electronic Voltage Regulator

*Stability attained in 7 minutes after starting*



REGULATOR for stable input

**Uses** — For supplying constant voltage AC power to units requiring extremely stable voltage input. **Features** — The regulator is especially suited for converting the fluctuating voltage obtained from commercial 115 volt, 60 cycle AC circuits to highly stabilized voltage to operate precision photoelectric densitometers and similar equipment.

**Description** — Output power is 160 watts at 110 volts, AC. The output voltage may be adjusted from 110 to 120 volts. The electrical regulation factor is about 1000, thus reducing a 10 volt input fluctuation to a few tenths of a volt. A frequency change in the input voltage will not vary the output voltage. Complete stability is obtained in seven minutes after starting the unit. The regulator is 26 in. high, 19 in. wide and 22 in. in depth. Weighs 100 pounds.

HARRY W. DIETERT CO., Dept. CP, 9330 Roselawn Ave., Detroit, Mich.

When inquiring specify CP A1008 — see information request blank, pgs. 2-3

## SK FLOW INDICATORS...

### ...Save time, trouble and expense

#### CONSTRUCTION DETAILS

Cast bodies are designed to withstand same pressures as extra heavy pipe fittings, and are available in either red brass or meehanite iron. Glass is tempered plate that is thermal-shock resistant and the minimum 1/4" thickness makes it practically unbreakable. Indicating vane is rotary type of light plastic, practically frictionless and corrosion resistant.

#### ROTARY TYPE

Strong as the pipe fittings themselves, SK Flow Indicators may be installed in any position and indicate flow in either direction. The feather-weight, practically frictionless rotor starts to revolve with the slightest fluid motion and its speed is a general indication of the flow rate. There is practically no pressure loss through the indicator. Designed to operate at pressures up to 250 psi and temperatures up to 250° F, rotary type indicators are supplied in pipe sizes from 1/2 to 2 inches inclusive.

#### FLAPPER TYPE . . . DOUBLE GLASS

Suitable for use in any position except vertical-downward flow, a flapper indicates flow by movement from a closed position. The body of the indicator is double-sealed so that the flap may be readily changed to permit flow in either direction.

#### FLAPPER TYPE . . . SINGLE GLASS

Similar to the above, this indicator is used for clear fluids where front illumination is adequate. Both flapper types are supplied in pipe sizes from 1/2 to 3 inches inclusive.

Positive knowledge of flow conditions in piping is desirable and often necessary to insure proper control of process or equipment. By installing an SK Flow Indicator, power may be conserved, a costly batch may be saved, a continuous process may be kept in operation, or damage to expensive equipment may be prevented.

SK Flow Indicators provide opportunity to observe flow and condition of fluids when installed in pipe lines to and from mixers, evaporators, towers, ejectors, pumps, in fact, most every type of equipment. They show clearly the flow of water, air, steam, oil, ammonia, propane, butane, and many other fluids. They can be used for practically any gas or liquid sufficiently translucent to permit visual indication.

Other types of Flow Indicators are available including Bull's Eye Sight, Distillate and Leak. For specific information and prices, send us a description of your flow-sight problems, stating kind of fluid, pipe sizes, operating pressures and temperatures.



## SCHUTTE & KOERTING CO. MANUFACTURING ENGINEERS

Main Office and Works: 1173 Thompson St., Philadelphia 22, Pa.

JET APPARATUS • CONDENSERS AND VACUUM PUMPS • HEAT TRANSFER EQUIPMENT • VALVES • ROTAMETERS AND FLOW INDICATORS • GEAR PUMPS • STRAINERS • OIL BURNING EQUIPMENT • SPRAY NOZZLES AND ATOMIZERS • RADIAPIN TUBES

When inquiring specify CP A1009 . . . see information request blank, pgs. 2-3

## Can Filtros help you solve problems in—

**AERATION—  
AGITATION—  
DIFFUSION—  
FILTRATION?**



**What Filtros Is.** Filtros is a rigid, strong, uniformly porous, acid proof mineral medium composed essentially of silica. It is a truly porous ware, not cellular. Nothing is used in its manufacture that is not in the finished product. It is porous by nature and not by any artificial means. Filtros is machineable.

### Physical Properties:

**Structure:** Its structural condition is best described by comparing it to a mass of capillary tubes which take a tortuous path through the ware.

**Porosity:** Filtros is made in seven standard grades. Controlled variations in pore structure provide a 40 fold range in rated flow capacity, while maintaining high mechanical strength.

**Capillarity:** Filtros retains by capillarity from 25% to 40% or more of its weight of water.

**Temperature Resistance:** Filtros can withstand safely temperature variations of 150° F., even if made suddenly. Expansion and contraction amounts to approximately 1 in 1800 for a range of 100° F.

### Chemical Properties:

Filtros is chemically inert and is unaffected by those chemicals which do not attack silica.

### Uses:

Some of the present uses for Filtros are aeration, agitation, diffusion and filtration of gases and liquids. Because of its porous nature it is also used for electrolytic tank linings. Filtros is being successfully used as a catalyst carrier and its importance in this duty is of increasing interest. In addition to these, a number of new uses are being developed for this versatile material.

Filtros is regularly supplied in plates 12" x 12" x 1 1/2" but can also be furnished in curved shapes, grooved bottom plates, cylinders, discs, thin plates and special assemblies.

Filtros engineers will be glad to work with you on any of your processes where Filtros might be applicable. Consultation with them puts you under no obligation. Send for free copy of "Filtros — The Porous Mineral Medium."

**FILTROS Incorporated**  
HOWARD ST., E. ROCHESTER, N. Y.

When inquiring specify CP A1010 — see information request blank, pgs. 2-3



## New Materials

### Anion Exchange Resins Recover Tartrates From Grape Wastes

*Chemical cost is 4¢ per lb. or less and at rate of almost 5 lbs. of acid per cu. ft. of exchange material*

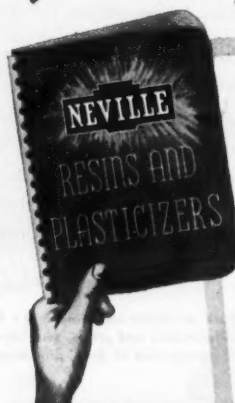
**Uses —** These synthetic anion exchange resins have been used for some time in water conditioning, in increasing sugar yields and in purification of pectin being investigated for blood plasma application. A new and important application has been demonstrated in U. S. Department of Agriculture tests in which the resins recover most of the valuable tartrates (formerly lost in the treatment of grape winery waste liquor) used in the beverage industries and in baking powders.

**Features —** Recovery is as high as 85% and at a cost of less than four cents per pound at the rate of five pounds of acid per cubic foot of exchange material.

**Description —** Solutions containing ionized salts are passed through beds of these exchange resins which exchange one ion in the resin's structure for an objectionable ion in the solution. When an exchanger bed is depleted, regeneration becomes necessary — a reverse reaction which again moves the objectionable ion from the resin and replaces it with another ion such as hydrogen, and the exchanger is

ready for re-use. The usefulness of the ion exchange resins is increased by the fact that the beds retain the operating efficiency until the absorption capacity is reached. There is no "leakage" or gradual reduction in efficiency as the bed reaches its exchange capacity. Tartrate occurs in brandy-still slops as a very dilute solution and is accompanied by large amounts of extraneous materials, among which other acids and salts, pigments and colloidal materials are the most prevalent. To recover a tartrate of high purity in a satisfactory yield, it is necessary first to separate the tartar and then to concentrate it so that calcium tartrate can be precipitated in sufficient quantities to make the process economically practical. Both ends can be attained through the use of an anion exchanger which is placed in beds similar to filter beds. When brandy-still slops are passed through the exchanger the tartrate remains affixed to the resin while most of the unwanted material passes through as waste. When the exchanger bed has attained capacity load, a solution of sodium chloride is passed through it to remove the tartar as sodium tartrate solution of about 5 percent concentration. At the same time the sodium chloride solution prepares the bed for another adsorption cycle. The calcium tartrate is precipitated from the sodium chloride regenerant solution by means of calcium chloride. This process yields calcium tartrate of excellent purity and recovery amounts to 85.5 and even more in the case of dilute slops. The operation can be easily

## Your Guide... TO THE NEVILLE LINE of Resins and Plasticizing Oils



It's Neville's latest hand-book on Resins and Plasticizing Oils, containing a wealth of information that should prove a convenient guide to the proper selection of the right Neville product to meet your problems.

In its 64 pages are listed grades, specifications and uses of each of the many Neville Resins or Plasticizers. Write for your copy today!

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*Chemicals for the Nation's War Program*

BENZOL • TOLUOL • XYLOL • TOLLIAC • NEVSOL • CRUDE COAL TAR SOLVENTS  
HI-FLASH SOLVENTS • COUMARONE-INDENE RESINS • PHENOTHIAZINE • TAR PAINTS  
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RECLAIMING, PLASTICIZING, NEUTRAL, CREOSOTE, AND SHINGLE STAIN OILS

When inquiring specify CP A1011 — see information request blank, pgs. 2-3

## STAND-OUTS in quality and versatility



**CARBONIC GAS  
AND**



Years of use have clearly established their quality and dependability. Today these versatile products are doing vital jobs in many fields — with the Armed Forces, war manufacturers, in food transportation, and in the processing of chemicals and pharmaceuticals. Help conserve them. Limit orders to actual needs.

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General Offices: 60 E. 42nd St., New York 17, N. Y.

NATION-WIDE SERVICE — DISTRIBUTING STATIONS IN PRINCIPAL CITIES

When inquiring specify CP A1012 — see information request blank, pgs. 2-3



## MATERIALS

handled by one man with the necessary technical supervision or perhaps some help with precipitations. Complete information on anion exchange resin — Amberlite IR-4 on request.

RESINOUS PRODUCTS & CHEMICAL CO., Dept. CP, 22 W. Washington St., Philadelphia, Pa.

When inquiring specify CP A1013 — see information request blank, pgs. 2-3

### Recent Data on Chlorinating Agents

A new technical bulletin (No. 328A) upon the uses of its chlorinating agents has been issued by manufacturer of liquid chlorine and many chlorine compounds. The company is in a position to furnish several types of chemicals to introduce chlorine into organic and inorganic compounds. Since the subject of chlorination is very large, the bulletin is suggestive and gives a summary of the most important aspects of the use of chlorine and its derivatives in the production of organic compounds.

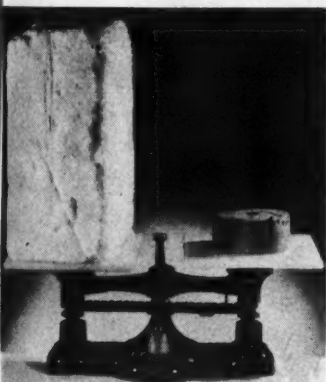
The chlorinating agents are: (1) Chlorine, (2) Sulfur Chlorides (mono- and di-), (3) Sulfuryl Chloride, (4) Thionyl Chloride, (5) Hydrogen Chloride, (6) Phosgene (Carbonyl Chloride). Following the discussion of each chlorinating agent, a bibliography of reference material is given in which the subjects are covered in more detail. Copies can be obtained on request.

HOOKER ELECTROCHEMICAL CO., Dept. CP, Niagara Falls, N. Y.

When inquiring specify CP A1014 — see information request blank, pgs. 2-3

### Plastic Foam Weighs 1/7 as Much as Cork or 1 1/2 Lb. Per Cu. Ft.

*Insulating and sound deadening properties good, especially in proportion to its light weight*



SCALES show weight-volume ratio

**Uses** — Now being manufactured for important war uses the distinctive features of this plastic foam suggest its application to various insulation requirements such as in buildings and automobiles.

**Features** — Weighs only one seventh as much as cork.

**Description** — Although this plastic foam has great buoyancy it is semi-rigid. The great volume of air space it contains contributes greatly to its insulating and sound deadening properties in comparison to its weight, which is less than a pound and a half a cubic foot. It can be made to weigh as little as three quarters of a pound per cubic foot. Developed to meet specialized vital needs, a combination of synthetic plastic materials are foamed and then solidified to produce this material, which is called "flotofoam."

UNITED STATES RUBBER CO., Dept. CP, Rockefeller Center, New York, N. Y.

When inquiring specify CP A1015 — see information request blank, pgs. 2-3

## Consider

# SANTOSITE

(Monsanto's Sodium Sulfite Technical)  
as a possible means of improving  
processes and reducing costs

MONSANTO SANTOSITE (Sodium sulfite, anhydrous technical) has, we believe, many unexplored possibilities in a wide variety of industries.

Study the data on Santosite (printed at right) and think of its possible application in improving processes and cutting costs in your production. Keep in mind, please, that Monsanto Santosite is low in cost and is available for immediate shipment without priorities.

If you see possibilities of Santosite serving your industry, we shall be glad to send more detailed information and a sample for your experimentation. Services of our technical staff will be made available wherever possible. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second St., St. Louis 4, Missouri. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle, Montreal, Toronto.

**SANTOSITE AVAILABLE FOR  
IMMEDIATE SHIPMENT  
WITHOUT PRIORITY**

### SANTOSITE DATA (Sodium Sulfite)

Santosite may be of service to you because it has:

1. Affinity for free oxygen.
2. Alkaline buffering value.
3. Mild reducing action over a broad pH range.
4. Bleaching effects.
5. Reactivity with organic compounds, such as lignin, resins, amines and diastase.
6. Reactivity with sulfur, oxygen and chlorine to form many useful compounds.

#### Properties

**APPEARANCE** — Slightly tan-colored, crystalline powder.  
**ODOR** — Faint.  
**pH** — 10% solution has a pH of 10.  
**BULKING VALUE** — About 45 pounds per cu. ft.  
**STABILITY** — Relatively non-hygroscopic and stores well.  
**SOLUBILITY IN WATER** — Saturated solution at 80° F. contains approximately 25% by weight of Santosite.

#### Assay

**SODIUM SULFITE** — 93% minimum.  
**BALANCE** — Principally sodium sulfate.

**MONSANTO  
CHEMICALS**

SERVING INDUSTRY...WHICH SERVES MANKIND

**FREE  
SAMPLE!**

MONSANTO CHEMICAL COMPANY  
Organic Chemicals Division  
1700 South Second Street, St. Louis 4, Missouri

We see possible uses of Santosite in our industry.  
Please send further information and sample.

Name.....  
Company.....  
Street.....  
City..... Zone..... State.....

When inquiring specify CP A1016 . . . see information request blank, pgs. 2-3

## DO YOU KNOW WHAT

# Furfuryl ALCOHOL CAN DO?

- **SOLVENT** for nitrocellulose, dyes, resins (both synthetic and natural) and many organic compounds.
- **MISCIBLE** with water, alcohol, chloroform, ether, coal tar solvents and most other **NON-PARAFFINIC** hydrocarbon solvents.
- **IMMISCIBLE** with Lard, Menhaden, Rape Seed and similar oils; only slightly miscible with linseed oil.
- **REACTIVE** in presence of mineral acids, rapidly forming useful resins.
- **PLASTICIZER and SOLVENT** in bonding abrasive grinding wheels of improved temperature and moisture resistance.
- **WOOD-PENETRATING VEHICLE** for organic substances.
- **PAINT, VARNISH, and LACQUER REMOVER.**
- **WETTING AGENT** for uniform Plastic Mixes.

*Furfuryl* Alcohol (Refined) is available for uses requiring a narrower boiling range, a light colored product completely miscible with water.

**OUR TECHNICAL STAFF** will be glad to help you secure more complete information about the application of Furfuryl Alcohol to your problems. **WRITE FOR THIS BULLETIN.**

## QUAKER Furfuryl Alcohol (Technical)

Molecular Weight	98.10
Freezing Point, °C	-31
Boiling Range, °C (95%)	167 to 177
Specific Gravity (25/25°C)	1.130
Flash Point (open cup) °C	75
Refractive Index (25/D)	1.4868
Vapor Pressure at 30°C, mm Hg.	2
Surface Tension (dynes/cm)	38.2

### SHIPPING INFORMATION

Standard Containers: 9, 45, 90 and 500 lb. drums (net).  
 Carload of Drums (80) 40,000 lbs.  
 Tank Car, 9000 gal. 75,000 lbs.  
 All ICL quantities F.O.B. Cedar Rapids, Iowa  
 500 lb. drums also F.O.B. Waverly, N. Y.  
 Tank cars F.O.B. Niagara Falls, N. Y.



*Furfural* is a liquid aldehyde, minimum 99.5%  $C_4H_3O \cdot CHO$ . It has proved highly efficient in the production of aviation lubricants, synthetic rubber, wood resins, phenolic resins, abrasives and grinding wheels, glyceride oil separations, tall oil processing, vitamin oil refining, photo-sensitive resins, fungicides, bactericides, and preservatives, and as a pharmaceutical intermediate, solvent for coatings, esters, gums, textile and shoe dyes, and cleaners.

## The Quaker Oats Company

CHEMICALS DEPT.

1940 Board of Trade Bldg.

141 W. JACKSON BOULEVARD . . . . CHICAGO 4, ILLINOIS

FURFURAL . . . FURFURYL ALCOHOL . . . HYDROFURAMIDE . . .  
 TETRAHYDROFURFURYL ALCOHOL . . .

When inquiring specify CP A1017 — see information request blank, pgs. 2-3

## MATERIALS

## Booklet Lists Over 1000 Ways to Use Glycerine in Plant & Laboratory

The important part played by glycerine in more than a thousand applications is discussed and explained in a highly practical and entertaining presentation in thirty-two page book. Its great advantage in a wide variety of processing operations are emphasized. Chemical and physical properties are summarized and the numerous grades are listed and uses for which they are best suited identified. Its value and desirability in combination with drugs and pharmaceutical products, tobacco, cosmetics, ceramics, explosives, lubricants, inks; as well as various beverage and food applications is stressed. Among the many uses enumerated are: (1) Adhesives and Pastes; (2) Explosives; (3) Glass, Ceramics, Abrasives; (4) Leather; (5) Lubricants; (6) Metals; (7) Paper; (8) Printing, Lithography, Inks; (9) Rubber; (10) Insecticides, other Products for Agricultural Use; (11) Beverages including: artificial flavor bases and essences, brewing products sweetener, clarifying and maturing agent and mineralizing beverages with glyco-phosphates. (12) Food applications including: Anti-graining agent in candy making, diabetic foods, odor development inhibitor, soybean products, sugar refractometer standardization; (13) Cosmetics: Acid creams, acne creams, shave lotions, bath salts, deodorants, hair preparations, nail enamel, soapless shampoos; (14) Drugs and Pharmaceuticals — listing in order of the appearance in U. S. P. XII and N. F. VII. In addition to the concise general discussion and the listings of some 1583 uses under various headings the last five pages comprise an appendix. The tables and charts in it are included primarily for the



**NO MORE DAMAGE FROM CONDENSATION OR SWEATING PIPES, TANKS, WALLS, CEILINGS AND AIR DUCTS**

**NO Drip**

## A SURE CURE

• This sensational plastic cork coating prevents condensation drip from metal, concrete, brick, wood, plaster or composition surfaces. Permanently protects metal against rust and corrosion, thus prolonging life of pipes, tanks, etc. Forms a moisture-proof, insulation type coating impervious to acid and alkali.

Stucco-like finish requires no maintenance. A gallon covers about 30 feet of 1/2" pipe. Dries in 24 hours. Comes in 1, 5 and 55 gallon drums.

Immediate Shipment. Order from your Supply House.

**FREE NoDrip Circular** about Condensation Drip and its Prevention.

**J. W. MORTELL CO.**  
 Technical Coatings Since 1895  
 330 BURCH ST., KANKAKEE, ILL.



When inquiring specify CP A1018 — see information request blank, pgs. 2-3

# MAKE Tough Tasks EASY!

Have you a production, maintenance, packaging or shipping problem that needs solving? Want to speed up an assembly operation or break a bottle neck? Whatever it may be, this amazing **new tool for industry** may give you the answer. It's **MYSTIK** — the Self-Stik cloth tape that's doing hundreds of tough jobs better in factories everywhere. **MYSTIK** isn't ordinary tape—it's a **tool** with a thousand uses. Try it on some of your problems now. Let us send you a **FREE ROLL** of **MYSTIK** and a booklet full of real cost-cutting ideas. Write: Chicago Show Printing Co., 2629 N. Kildare, Chicago 39.

**MYSTIK**

*Self-Stik*

**ADHESIVE PRODUCTS**

When inquiring specify CP A1019 — see information request blank, pgs. 2-3



## Use ONE JOINT SEAL



*For ALL these services!*

- **Insoluble**—Stays put; will not wash out
- **Seals Permanently**—Fills clearances and imperfections
- **Eliminates galling, rust**—Joints easily taken apart later
- **Never hardens**—Can't crack under vibration or strain
- **Ready for use**—Packed in 1, 5 and 7 lb. cans

John Crane Plastic Lead Seal is **ONE** compound for **ALL** general services. Use it for plant maintenance and production assembly. A test tells the full story. Write us—sample will be sent immediately.

**CRANE PACKING COMPANY**

1821 CUYLER AVE. CHICAGO 13, ILL.

When inquiring specify CP A1030 — see information request blank, pgs. 2-3



## MATERIALS

benefit of the chemist or technician who may need this precise assistance in determining the reaction of glycerine to specific research problems. The lists of uses are numbered continuously so as to serve as a convenient, definite reference in requesting detailed information.

GLYCERINE PRODUCERS' ASSOCIATION, Dept. CP, 295 Madison Ave., New York 17, N. Y.

When inquiring specify CP A1021 — see information request blank, pgs. 2-3

### Self-Sticking Tapes For Moisture-Dust Proof Sealing of Food Packages

Illustrated folder describes a number of the extensive uses of self-sticking industrial tapes. In addition to the more familiar shipping room applications, others such as water-proof seals, identification markers, electrical uses and general repair are illustrated and described. In sealing foods they contribute to protection against gases, odors, moisture, contamination. Copies on request.

CHICAGO SHOW PRINTING CO., Dept. CP, 2635 N. Kil-dare Ave., Chicago, Ill.

When inquiring specify CP A1022 — see information request blank, pgs. 2-3

### Caulking Easily Applied With Gun

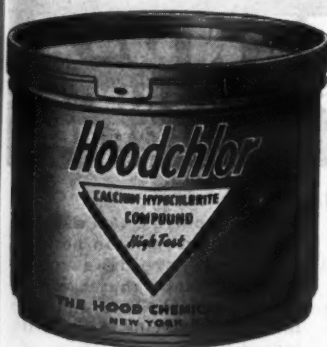
Plastic weatherstripping easily applied with caulking gun is described in four page bulletin. The caulking material is made with waterproof and elastic oils combined with finely ground pigments and thoroughly fabricated with asbestos fibre. Available in a number of colors.

THE UPCO CO., Dept. CP, 4805 Lexington Ave., Cleveland, Ohio.

When inquiring specify CP A1023 — see information request blank, pgs. 2-3

### Calcium Hypochlorite Easily Handled in 25 Lb. Pails

*Resealable containers are lined with special chlorine resistant lacquer*



**Uses** — Purifying water, sewage treatment, process plant germicide.

**Features** — This product is now being packed in convenient twenty-five pound resealable pail of steel, lined with a special chlorine resistant lacquer. The pail is of extremely sturdy construction and has been adapted as a

PAIL with chlorine resistant lining

standard container for shipping certain chlorinated chemicals overseas. The small size of these containers permits easy handling.

**Description** — Information on this organization's high test calcium hypochlorite known as "Hoodchlor", will be sent on request.

HOOD CHEMICAL CO., Dept. CP, 1819 Broadway, New York, N. Y.

When inquiring specify CP A1024 — see information request blank, pgs. 2-3

# CITRIC ACID

## Announcement

Chas. Pfizer & Co., as the largest producers of Citric Acid and Citrates in the world, wish to now assure the consumers in the United States that this company will make no advance in their present prices for these products for at least one year from October 1st, 1939.

CHAS. **PFIZER** & CO., INC.

Manufacturing Chemists

81 MAIDEN LANE, NEW YORK • 444 W. GRAND AVENUE, CHICAGO, ILL.

1849—IMPORTANT TO THOSE WHO WANT QUALITY—1939

ABOVE IS A REPRODUCTION OF AN "AD" WHICH APPEARED IN THE TRADE PAPERS IN OCT., 1939—

OUR PRICE FOR CITRIC ACID TODAY

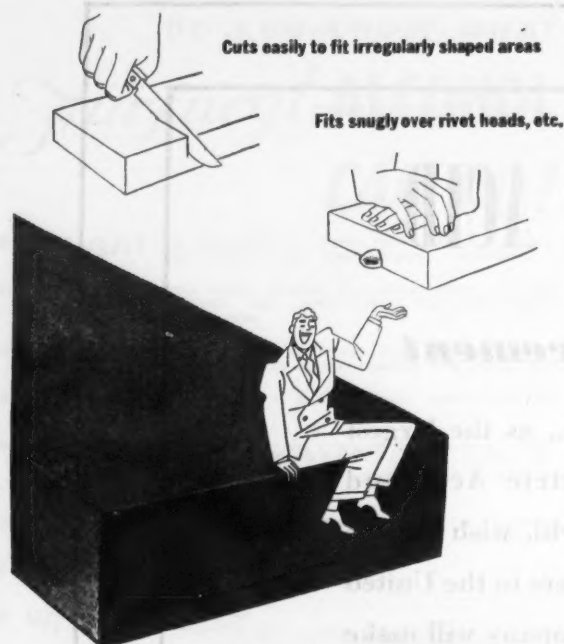
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YOU CAN DEPEND UPON

PFIZER POLICY

PFIZER QUALITY





## EAGLE SUPERTEMP

### all-purpose block insulation

Here's one way to save vital fuel and at the same time cut your own costs. You can effect immediate fuel economies by insulating your equipment with all-purpose Eagle Supertemp Block. This efficient block insulation is easy to apply—combines light weight with sufficient structural strength to withstand normal handling. Effective through a full range of temperatures to 1700° F.

Eagle Supertemp Block resists fire and is chemically and physically stable, because it is fabricated from water-repellent Eagle Mineral Wool. Contains thousands of "dead" air cells, nature's most efficient insulating material.

To speed application of Eagle Supertemp Block, use Eagle Insul-stic, a paste-like adhesive which serves as a temporary bond. Makes a clean, workmanlike installation.

**FREE MANUAL!** Shows how insulation on a single boiler shell can save as much as \$1500 a year in fuel costs. Gives other examples. Includes Heat Loss Estimate Sheet for you to use in your plant. Start your plant's fuel conservation program now by a survey with the Estimate Sheet.

Write today for your **FREE** copy! Address: **Insulation Division, Eagle-Picher Lead Company, Cincinnati (1), Ohio.**

Speed the Victory with **MORE** War Bonds!

## THE EAGLE-PICHER LEAD COMPANY

CINCINNATI 10, OHIO  
Eagle-Picher High Temperature Insulating Materials include: Eagle Super "66" Plastic Insulation, Eagle Insulating Blankets, Eagle Supertemp Block, Eagle Loose Wool, Eagle Insulseal, Eagle Insul-stic, Eagle Finishing Cements.



When inquiring specify CP A1025 — see information request blank, pgs. 2-3

## MATERIALS

### Trimethylolpropane-Polyhydric For Low Viscosity Resins

*Produce resins, oils with wider solvency and higher stability to light*

**Uses** — In making low viscosity drying and non-drying resins. These alkyls have shown application in the manufacture of textile printing plates and impregnants; also used in the manufacture of synthetic drying oils; rosin esters, coating compositions and plasticizers.

**Features** — In general, resins and oils made from trimethylolpropane show wider solvency and compatibility than corresponding compounds made with other polyhydric alcohols. TMP resins are said to have higher stability to light.

**Description** — The product is a crystalline waxy solid with the following properties: Formula —  $C_8H_{11}(OH)_3$ ; Molecular Weight 134.17; Hydroxyl Content (% OH) 33.5%; 1.0%; Combining Weight 50.8; Color (Gardner) 11; Solubility, grams per 100 grams solvent at 25° C. Water — all proportions; Ethyl Alcohol — all proportions; Glycerol — all proportions; Benzene — 0.02; Acetone 71. Esters made with rosin and trimethylolpropane are soluble in mineral spirits and have good compatibility with drying oils and nitrocellulose so that they may be used for the preparation of spirit lacquers, oil lacquers and nitrocellulose lacquers.

HEYDEN CHEMICAL CORP., Dept. CP, 393 7th Ave., New York 1, N. Y.

When inquiring specify CP A1026 — see information request blank, pgs. 2-3

### New Dispersion of Colloidal Graphite, In Various Fluids Listed In Bulletin

Following the lifting of restrictions on the release of information, a new folder Number 440 has been released which completely catalogs and describes new dispersions of dag colloidal graphite developed to meet specific requirements in war industry. They possess numerous important potentialities for civilian industry. The producers in collaboration with the government, certain war industries and with its own service engineers have tested each of these dispersions in the field under many conditions. Copies on request.

ACHESON COLLOIDS CORP., Dept. CP, Port Huron, Mich.

When inquiring specify CP A1027 — see information request blank, pgs. 2-3

### 2 — Methyl — 2, 4 — Pentanediol Solvent, Penetrant, Blending Agent, Humectant

*Miscible in an unusually large number of liquids of basically different chemical nature*

**Uses** — High boiling solvent, penetrant and lubricant, coupling and blending agent, mild humectant. Known uses include brake fluid, cosmetics, duplicator fluids, dry cleaning soaps, printing inks, cutting oils, hair tonics, disinfectant solutions, shaving creams, textile specialties.

**Features** — Miscibility with an unusually large number of liquids of basically different nature, combined with stability and mild odor make it a highly serviceable solvent.

**Description** — Properties: Molecular weight 118.17, Boiling point 122.5° C at 50 mm., 194-198° C at 760 mm., specific gravity 0.9235 at 20°/20°C., refractive index

### When It Is Too Large For Tank Immersion

**PREPARE FOR PAINTING  
WITH W. O. #1—EQUALLY  
EFFECTIVE ON ALL METALS**

**A FAR MORE RAPID TREATMENT THAN  
ANODIZING OR CHROMATIZING**

**May be sprayed**—Turco W. O. #1 is non-toxic, is used cold, creates no fumes, is no hazard to personnel. As it may be sprayed, brushed or swabbed on, it is especially useful for the treatment of structural members, steel cables, assemblies or sheets too large for tank immersion or where immersion is impractical.

**Cleans**—removes light rust, oil, grease, shop dirt.

**Passivates** (phosphatizes) steel, iron, aluminum, zinc, galvanizing—deposits a flexible film, insoluble in water, of iron phosphate on iron and steel, aluminum phosphate on aluminum and alloys, zinc phosphate on zinc and galvanizing.

**Etches** (chemically)—provides a firm paint anchorage. Close tolerances are not disturbed by this chemical etching.

Write Turco for details today, Department CHP-1



**TURCO**

TURCO PRODUCTS, INC. • Main Office and Factory: 111 S. Central Ave., Los Angeles 1 • Offices and Factories: 110 Henderson St., Houston 10, Tex. • 125 W. 46th St., Chicago 9, Illinois • Offices and Warehouses in All Principal Cities

INDUSTRIAL CHEMICAL COMPOUNDS

When inquiring specify CP A1028 — see information request blank, pgs. 2-3

**FOR CHAPPED, CRACKED,  
OR DRY SKIN—**

**M.S.A. FEND-X**  
**INDUSTRIAL SKIN  
CONDITIONER**



Use this modern cream to keep your workers' skin in healthy condition—avoiding sore, chapped hands that hamper production! FEND-X supplies to the skin specially-formulated ingredients to offset effects of industrial and winter exposure—proved on-the-job. Easy to use. non-greasy, emollient.

**WRITE** for descriptive literature on FEND Barrier Protection creams and lotions.

**MINE SAFETY APPLIANCES COMPANY**  
Braddock, Thomas and Meade Streets  
PITTSBURGH 8, PA.

When inquiring specify CP A1029 — see information request blank, pgs. 2-3



## MATERIALS

14278 at 20° C., melting point: becomes semi-solid at -40° C with no crystal formation. Flash point 94° C (201° F). Vapor pressure: Temperature at degrees C: 90, 100, 120, 140, 150, 160, 180, 190; Vapor pressure mm. of Hg: 8.5, 14.3, 41.3, 104.1, 159.3, 237.7, 494.7, 692.1. Saybolt universal viscosity 75° F. 2 mins. 51 sec., 32° F. 17 mins. 9 sec.

COMMERCIAL SOLVENTS CORP., Dept. CP, 17 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A1030 — see information request blank, pgs. 2-3

### Acetylene Peroxide

*Higher active oxygen content; available in a pure, undiluted form*

**Uses** — Undiluted active catalyst for the polymerization of various monomers, drying agent or catalyst for unsaturated oils, bleaching agent and germicide.

**Description** — Acetyl Benzoyl Peroxide is a newly available organic peroxide of high active oxygen content (8.4%). It has the highest active oxygen content of any pure diacyl peroxide now available. Acetyl Benzoyl Peroxide is an inflammable solid consisting of yellow white crystals with excellent solubility characteristics. The material is at present available in pilot plant quantities. **Formula** —  $\text{CH}_3\text{CO.O.O.CO.C}_6\text{H}_5$ . **Molecular weight** — 180 **Melting point** 36 - 37° C. Samples and further data can be obtained on request.

LUCIDOL CORPORATION, Dept. CP, 1740 Military Road, Buffalo 5, N. Y.

When inquiring specify CP A1031 — see information request blank, pgs. 2-3

### Glossary Gives List of 99 Rayon Fabrics

A comprehensive rayon glossary devoted entirely to rayon and rayon fabrics recently issued provides a permanent reference work that alphabetically lists 99 rayon and blended fabrics, with brief descriptions of each. In most cases type of weave is indicated and major uses mentioned. There is also a list of definitions and terms used in connection with production and processing of these fabrics. A section is devoted to brief description with the aid of flow charts of manufacturing processes.

AMERICAN VISCOSE CORP., Dept. CP, 350 5th Ave., New York 1, N. Y.

When inquiring specify CP A1032 — see information request blank, pgs. 2-3

### Fluid Cement Dries to Flexible, Heat Sealing Coating

*When used in liquid state for bonding may be applied to one or both surfaces*

**Uses** — For joining many combinations of materials such as paper, cardboard, wood, plywood, asbestos, cotton, wool and hair felt; cork, Rockwood and Fibreglass, painted, lacquered, coated surfaces.

**Features** — May be used in natural state or reduced with water and applied by brush, gumming machine, spreader, by dipping or flow methods or with spray gun.

**Description** — Product is soft, white fluid cement, compounded of selected resin bases with complex non-resin materials. The film when dry is a semi-transparent, glossy, flexible coating possessing good heat sealing properties. 1, 5, 33, 55 gallon containers.

PAISLEY PRODUCTS INC., Dept. CP, 1770 Canalport Ave., Chicago, Ill.

When inquiring specify CP A1033 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

## WYANDOTTE CHEMICALS CORPORATION

# ONE OF THE WORLD'S GREAT PRODUCERS OF CHEMICALS

SODA ASH

CAUSTIC SODA

BICARBONATE OF SODA

CALCIUM CARBONATE

CALCIUM CHLORIDE

CHLORINE

HYDROGEN

SODIUM ZINCATES

AROMATIC INTERMEDIATES

DRY ICE

More than 100 other Organic and Inorganic Compounds

**vital to victory today**—READY TO WORK FOR A GREATER TOMORROW



WYANDOTTE CHEMICALS CORPORATION • MICHIGAN ALKALI DIVISION • WYANDOTTE, MICHIGAN

When inquiring specify CP A1034 . . . see information request blank, pgs. 2-3

# J&C AUTOCLAVE

THE IDEAL METHOD FOR IMPREG-  
NATING MAGNESIUM, ALUMINUM  
AND OTHER MATERIALS



If you have a problem of densifying magnesium, aluminum, wood or fibrous materials, it will pay you to get the facts about the J & C Autoclave. This ingenious, impregnating system, designed and perfected for one of the country's largest chemical firms is equipped for either steam or electrical heating, and has proven its efficiency. Write for complete information.

JACKSON & CHURCH COMPANY, SAGINAW, MICHIGAN

When Inquiring specify CP A1085 — see information request blank, pgs. 2-3

## ★ IDEAS ★

Industrial ingenuity constantly hatches new ideas, many of which can be applied to similar problems in other plants. The Editors have selected these ideas and developments because of their interest and possible application in specific plant problems. If you would like more information on any of these, write direct to the manufacturers.

### Skid-Vertical Frame Unit Aids Safe Tying of Fragile Parts

*Permits precision handling, compact storage with  
no danger to easily breakable products*



FRAMES and channels and Z bar as employed in tying system

A unique and practical method for tying various delicate products and products packed in breakable packages that may not lend themselves to packing one on top of the other to any appreciable height is made possible by a skid platform with interlocking channels and an interlocking frame. A channel is welded to

the lip of the skid at one end with the legs of the channel facing downward. This engages a "z" bar. The other end of the skid platform has a channel welded under the lip of the skid with the channel inverted so that the legs stick up. This end of the skid platform also has a vertical end frame. In operation, the bottom row is placed on the floor with the frame end of the skid away from the wall and the second skid holding the second row is placed with the turn down channel engaging the "Z" bar attached to the wall. The leg of the skid at the opposite end will rest on the end frame of the skid beneath. The second row will be started with the end channel of the lower skid engaging the end channel of the adjacent lower skid in the first row. Channels of the platforms of the second tier of the second row will engage the channels of the skids on the second tier of the first row which face them. As in the tying of first row legs at other ends of skids will rest on end frames of skids beneath. These skid platforms can be tied as high as the lifting mechanism of the fork or platform truck will take them. In their present applications these units have been particularly serviceable in protecting polished surfaces of parts. (Union Metal Mfg. Co., Canton, Ohio.)

## COTTON DUCK and FILTER FABRICS

Here are 9 industries using our filter fabrics regularly:

1. Chemical Filters
2. Oil & Wax Filters
3. Dyestuff Filters
4. Cement Filters
5. Cane & Beet Sugar Filters
6. Food-Processing Filters
7. Ceramic-Processing Filters
8. Paint Filters
9. Mining, Quarrying, Smelting Filters

Just a few of the items for quick delivery from Chicago stock:

- |                 |  |
|-----------------|--|
| 36" No. 6 Duck  | 32" 19 oz. per sq. yd.<br>Filter Chain Cloth |
| 26" No. 8 Duck  |  |
| 36" No. 8 Duck  | 32" 18 1/4 oz. per sq. yd.<br>Filter Twill   |
| 40" No. 8 Duck  |  |
| 36" No. 10 Duck | 26" 18 1/4 oz. per sq. yd.<br>Filter Twill   |

Subject to prior sale.

If you have other requirements, send inquiry with details.

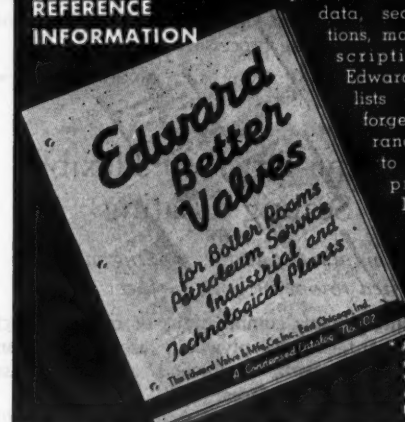
**BURCOTT MILLS**  
622 W. FULTON ST. CHICAGO 6, ILL.

When Inquiring specify CP A1030 — see information request blank, pgs. 2-3

## GET THIS CATALOG!

FOR COMPLETE  
STEEL VALVE  
REFERENCE  
INFORMATION

The new Edward BETTER VALVES Catalog No. 102 is packed with dimensional data, sectional illustrations, materials and descriptive details on Edward steel valves. It lists 456 cast and forged steel valves ranging from 1/2 in. to 12 in. for all pressures from 150 lb to 6000 lb. Yet it is so compact it will easily fit in your desk drawer.



A request on your company letterhead will bring your copy of Edward Catalog No. 102 promptly

THE EDWARD VALVE & MFG. CO., INC.

1230 WEST 144th STREET • EAST CHICAGO, IND.

**Edward Valves**  
Forged Steel & Cast Steel

When Inquiring specify CP A1037 — see information request blank, pgs. 2-3



## IDEAS

### Spats Guard Against Acids, Oils

*Provide ankle and foot protection for workers who must handle hazardous materials*



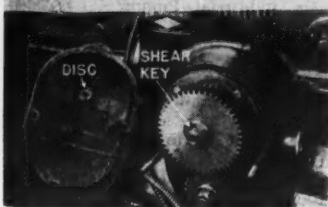
THE LATEST IN SPATS

spat on and removing it in a jiffy and adjusting to desired tightness at top. An elastic strap that fits under the instep aids in holding spat and keeping flare over instep in place. The spat is made from coated fabric which gives the same sort of protection as rubber. (Made by American Optical Co., Southbridge, Mass.)

A spat that is styled for safety, protecting workers who must work with acids, alkalis, oils, solvents and greases offers unusual comfort because of its light weight and extreme flexibility. The spat is quickly snapped over instep and around leg and ankle, fitting snugly, smoothly. Pants may be worn over the spat or tucked inside. The three snap fasteners provide for putting the

### Switch Lowers Cutter Breakage

*Used in conjunction with shear pin; soft brass key falls before cutter, switch releases permitting action of completed cycle*



CUTTER showing switch, plunger, shear key and disc

with a softer brass one, the length and strength of which was determined by experimentation, so that the key would fall before the cutter. When the key shears, the projecting end — which rides against a disc connected to the limit switch — falls free, releasing the switch and causing the machine to react as though the cycle were completed.

An electric limit switch, used in conjunction with a shear pin, has considerably reduced cutter breakage on a special plunge milling operation at General Electric's Erie Works. A regular shear key was first tried but since the automatic cycle might not be completed, the feed would not stop with the cutter. An electric limit switch and plunger was installed and the steel key was replaced

**"A name worth remembering"**

# FAIRBANKS-MORSE

Fairbanks-Morse postwar products will serve you with the *dependability* the world has come to associate with our name. Designing and manufacturing skills will not have to be re-learned in our plants as we turn to civilian production, because as a part of our war job, we've continued to build and improve our peacetime Diesel engines, generators, motors, pumps, and scales.

*F. A. Morse Jr.*  
General Sales Manager



BUY MORE WAR BONDS

Fairbanks-Morse Scales are far more than lastingly accurate weighing instruments. They are production tools, too. They speed manufacturing and distribution by counting parts and products, by weighing while materials are moving, by printing weight records, by weighing and disbursing preset amounts automatically, by guarding ingredient proportion secrets, and by performing many other often amazing services.

# SCALES

**FAIRBANKS, MORSE & CO.**  
CHICAGO 5, ILLINOIS

Diesel Locomotives • Diesel Engines  
Scales • Generators • Motors • Pumps  
Magnetos • Stokers • Railroad Motor  
Cars and Standpipes • Farm Equipment

When inquiring specify CP A1038 . . . see information request blank, pgs. 2-3

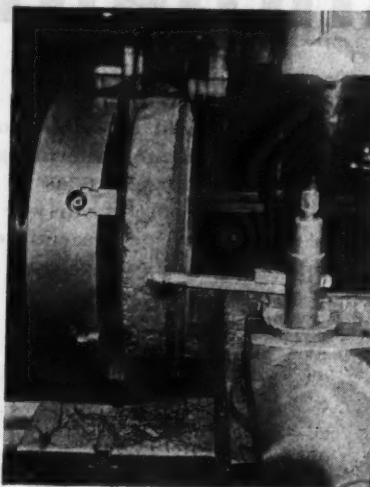
## Everlasting Fastenings by HARPER Chicago

The Harper organization is known as "Headquarters for Everlasting Fastenings" because it specializes in the manufacture of bolts, nuts, screws, washers, rivets and accessories made of Brass, Naval Bronze, Silicon Bronze, Copper, Monel and Stainless. Nothing in common steel. 4360 items in stock. Specials made to order. Write for 104 page, 4 color catalog and reference book. The H. M. Harper Company, 2644 Fletcher St., Chicago 18, Ill. Branch offices in principal cities.

## IDEAS

### Industrial Truck Rubber Tires Restored by Contour Turning

Method adds to useful life of tire and permits uninterrupted truck operation at best speeds



LARGE WHEEL mounted in lathe turning a lumpy tire is to remove high spots by turning in a lathe, making the circumference with the center of the

When solid rubber tires on truck wheels become flat in one spot, the spot continues to grow larger rather than to have corners rounded off, as might be expected. When this condition has developed to the extent of several flat spots, a truck running at five miles an hour is subject to excessive vibration. A very satisfactory method which has been developed at Warner & Swasey for recondition-

### "Blue Label"

### RR ALUNDUM

For Carbon Determinations



"Blue Label" RR ALUNDUM by Norton Company is recommended for protecting combustion boats from the slagging effect of iron oxide in carbon determinations.

"Blue Label" RR ALUNDUM is produced from a raw material containing over 99% pure aluminum oxide. Further processing increases purity and maintains the carbon content of this refractory grain below 0.0015%.

NORTON COMPANY

Worcester 6

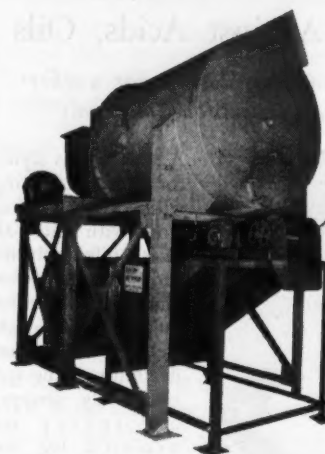
Massachusetts

NORTON

When Inquiring specify CP A1040 — see information request blank, pgs. 2-3

## HOW to obtain complete suppression of heavy dust

...when space for control equipment is a premium



Type "SHH" Hydro-Clone, 10,000 CFM capacity, showing sludge dewatering tank with automatic sludge ejector.

The "SHH" Horizontal Type Hydro-Clone reduces all dust to disposable sludge. There are no bags or screens, no nozzles, no moving parts. It is fully self-cleaning. All danger of explosion of dusts and fumes is eliminated.

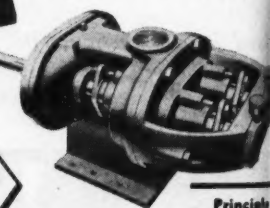
Type "SHH" Hydro-Clone can be located out-of-the-way place. Capacities 2 to 30 tons sand CFM. Write for Bulletin FY-131.

**WHITING CORPORATION**  
15667 Lathrop Ave.  
Harvey, Illinois

FREE New booklet of Practical Pointers on Dust Suppression. Ask for Bulletin FY-129.

When Inquiring specify CP A1041 — see information request blank, pgs. 2-3

## BUMP PUMPS



... SLOW SPEEDS

NO CHURNING ACTION - ONLY 2 MOVING PARTS

WHETHER you pump a light or viscous liquid there's a Bump Pump to meet your need — a pump that delivers a constant volume per revolution regardless of the speed or pressure. Bump Industrial Pumps are positive displacement type that can be operated at slow speeds... are self-priming under vacuums or against head pressure. No agitation, churning nor vibration take place within the pump... available in capacities from 1/2 to 400 gal. per minute, and models for constant volumes, variable capacities and automatically controlled volumes. Write for new illustrated catalog.

Principle of Operation



SELF PRIMING • POSITIVE ACTION

The **BUMP PUMP CO.**  
LA CROSSE • WISCONSIN

The Original Design and Manufacturer who introduced BUMP Pumps to the Industry

When Inquiring specify CP A1042 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When Inquiring specify CP A1030 — see information request blank, pgs. 2-3



## RIC-WIL PRESEAL Keeps Unit Water-Free Until Final Closure is Made

### —another important advantage of RIC-WIL INSULATED PIPE CONDUIT

Every possible precaution is taken at the factory to insure undamaged delivery of Ric-wil Prefabricated Pipe Units to job site, and to protect them until completely installed. A pre-cast cylinder of insulating cement is inserted in conduit ends, made water-tight by treated asbestos calking, and sealed with special waterproofing cement to prevent moisture from reducing insulation efficiency during shipment and installation. Pre-seal ring reinforces and protects units from damage in handling, and remains in the conduit after closure is made.

*This and other recent improvements make Ric-wil conduit by far the strongest, most durable and efficient protection for steam and process piping that can be obtained. Write for Catalog No. 44.*

**RIC-WIL** INSULATED PIPE CONDUIT SYSTEMS  
THE RIC WIL COMPANY - CLEVELAND, OHIO

When inquiring specify CP A1048 — see information request blank, pgs. 2-3

## Good for All Pressures... without Change of Valve or Seat

- Quicker Heating
- Small Size
- Light Weight
- One Moving Part
- Low Price

OVER  
350,000  
SOLD

Sold by more than 100 Mill Supply Distributors throughout the U. S. A. See your supply house or write for Catalog T-1739

YARNALL-WARING CO., 125 Mermald Ave., Phila. 18, Pa.

**YARWAY**

**IMPULSE STEAM TRAP**

When inquiring specify CP A1044 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

## IDEAS

wheel. Life of the remaining rubber is prolonged by the smooth contour and more uniform distribution of load and the efficiency of the truck is restored by enabling it to handle at normal speed. This reconditioning can be done by chucking the entire wheel with the tire, or by pressing off the tire and replacing it with a spare, (if spares are available). A complete job, including washing out bearings and repacking is done in two hours.

Imbedded chips should be removed by hand, provided this can be done without leaving a large hole. Spiral turnings, for example, may tear out too much rubber or cut a biscuit. Experience has indicated that the turning tool will usually flip out such chips with least damage. The cutting tool should be ground with considerable rake or clearance, and should present a fairly sharp edge as compared to a tool for turning steel. It should be rigidly clamped into the tool post. The sharp edge is fed into the tire at an upward angle. Make a cut 1/6 in. deep, or less, using a slow feed with the lathe chuck turning between 300 and 500 rpm. Due to the wide range of rubber compounds, and to variations in the conditions of the tires, the tool angle, clearance, feed and speed are best determined by experience. The top worn layer of rubber is cut more easily than the sub-surface layers. Sometimes a chip is caught on the tool edge and remains there, scoring the rubber. In this case the lathe must be stopped immediately and the chip removed. This can be done without removing the tool from the rubber. The operator should wear safety goggles. In the Warner & Swasey plant trucks are used on three shifts seven days a week. Tires have a normal life of one year. After turning they run about four months before needing further attention. After the first treatment no difference is noticed in the performance of the tire. After a second cutting the tires feel a little more solid. Reconditioning has been estimated to add as much as 70% to the life of a tire. Tires should be replaced in pairs having the same outside diameter. Wheels of smaller diameter are harder to recondition but may be turned and chucked in a grinder, using a fine 6 in. diameter wheel turning at high speed. Plenty of water must be used to wash the grinding wheel. Some trucks have a cluster of four wheels under the platform. The difficult replacement situation has been aided by the following method. Two steel wheels, one right and one left are provided with two rubber wheels, one right and one left, the steel wheels being turned 1/4 in. smaller in outside diameter. The rubber tires being larger carry the truck when it is empty or loaded lightly. Under heavy load the rubber tires are compressed and the steel wheels take up part of the load. (Data — Elwell Parker Electric Co., Cleveland, Ohio.)

### Portable and Stationary Gas Generators

Bulletin features complete line of acetylene generators, including portable model incorporating an "air-lift" water circulating system and enlarged radiation space between the carbide and water level which eliminates the "hot belt" and provide collar, double-scrubbed gas. The portable models are in 15, 30 and 50 lb. sizes with 30, 60, and 100 cubic feet maximum hourly productive capacity. Stationary models are available in 300 and 500 lb. sizes which deliver 300, 600 and 1000 cubic feet maximum hourly production. Copies of the bulletin, which also lists sizes and packaging of carbide for use in acetylene gas production, on request.

AIR REDUCTION, Dept. CP, 60 E. 40th St., New York 17, N. Y.

When inquiring specify CP A1045 — see information request blank, pgs. 2-3

## Have You a Tough Pumping Problem?



### Then get this New MOYNO PUMP BOOK!

There's no excuse, these days, to use old-fashioned pumps that hinder output with frequent breakdowns and low efficiency! Not when those problems can be practically *eliminated* by the revolutionary R & M Moyno Pump!

Get this new book and find out how the Moyno can help you. In eight fact-packed pages, it tells the *complete* Moyno story—compares the Moyno with other types of pumps, feature for feature. The Moyno Pump is recognized as the greatest pumping improvement in a decade, and it's rolling up *astounding* performance records in chemical plants all over the country. Because of its simple, unique pumping action, wear and resulting maintenance delays and expense are reduced to all-time lows. And because the Moyno handles heavy viscous and abrasive liquids *easily*—without cavitation or turbulence—production is increased and product quality is improved.

The entire book was written by Moyno engineers for other engineers who want all the details in technical, usable form. Your copy will be sent immediately—mail the coupon today!

### ONLY ONE MOVING PART!

Here's the patented principle of the R & M Moyno Pump's amazing performance. A single-threaded helical rotor revolves in a double-threaded helical stator, providing pumping action like that of a piston moving through a cylinder of infinite length.

Moyno pumps are manufactured under R. Moineau patents.

ROBBINS & MYERS, Inc., Moyno Pump Division, Springfield, Ohio  
(In Canada: Robbins & Myers Co. of Canada, Ltd., Brantford, Ontario)

Please send me the new 8-page book on the R & M Moyno Pump.

Name.....

Firm Name.....

Address.....

Pump will handle.....

When inquiring specify CP A1046 — see information request blank, pgs. 2-3

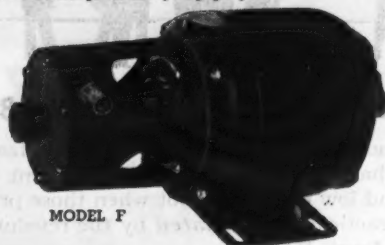
If you need...

## A SPECIALLY DESIGNED SMALL PUMP ask Eastern

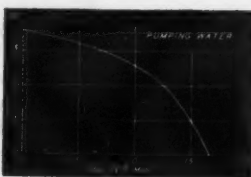
A large part of Eastern's business is the designing and building of special pumps, in quantities ranging from 25 to several thousand for the aviation, electronic, chemical, machine and other special fields. Eastern builds over 300 models, both centrifugal and positive pressure, ranging in size from 1/30 H. P. to 3/4 H. P. as standard units. Model F, illustrated, is representative of standard Eastern pumps.

### SINGLE STAGE CENTRIFUGAL PUMP

A heavy duty compact pump designed for continuous operation in applications requiring sizable volumes or pressures with a minimum expenditure of space and weight. Available with either stuffing box or rotary seal. Pump and motor close-coupled. Open vane type impeller mounted directly on the motor shaft extension eliminates need of bearings in the pump proper.



MODEL F

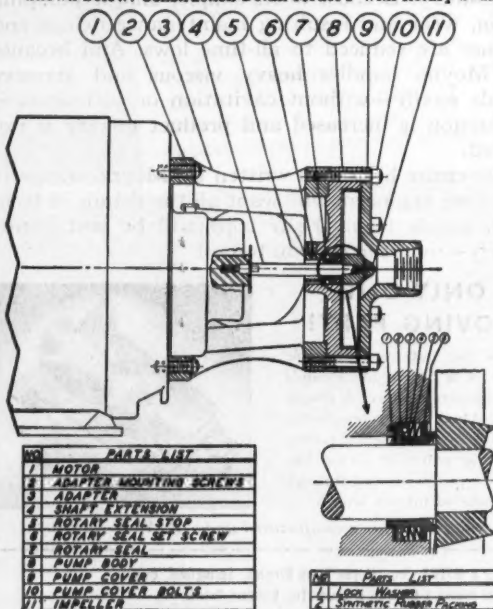


Size: 11 1/2" x 6 1/2" x 6 3/4"  
Weight: 35 lbs.

Alloys: Available in Cast Iron, Bronze, Stainless Steel, Monel Metal and Hastelloy.

Power: 1/3 H.P. in semi-enclosed, totally enclosed or explosion proof frames.

Shown below: Construction Detail Model F with Rotary Seal

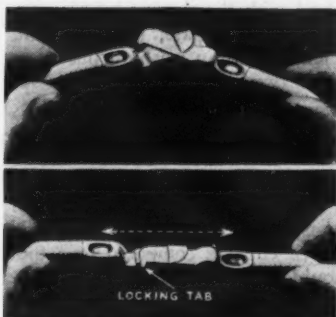


**EASTERN ENGINEERING COMPANY**  
49 FOX STREET, NEW HAVEN 6, CONN.

## IDEAS

### Self-Locking "Quick Disconnect"

Electrical connector employs jack-knife design for positive, secure lock



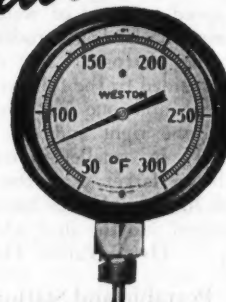
CROSSING connector halves, pulling slightly gives positive lock

A self-locking quick-disconnect type of electrical connector designed especially for small wires suggest a range of applications where such a connection is desired. Originally designed and approved by U. S. Army Air Forces, four clasp connector sizes accommodate 10 sizes of aircraft cable, from Nos. 18-8.

The two smaller sizes include insulation grip on the two smaller sizes. Composed of two identical halves, the device slides together in jack-knife fashion and locks in positive position with a slight pull. To lock, the halves are crossed, swung into line and pulled slightly to the locked position and no further pulling will disconnect. The connection is opened by pushing the halves together and giving them a slight swing. The clasp is made of copper and silver plated. Pressure creates good electrical contact. (Made by Burndy Eng'g. Co., Inc., 107 Bruckner Blvd., New York 54, N. Y.)

**MOST** *Readable*

WHERE  
READABILITY  
COUNTS MOST



Wherever temperatures are critical WESTON thermometers are preferred because of their large, boldly marked dial-type scales. Even though mounted high above eye level, or on equipment in poorly illuminated areas, the scale is visible, and readable, without inconvenience. Thus readings are made in less time... and with far greater accuracy... and without the temptation to carelessness that low visibility invites.

The wide-spread adoption of WESTON thermometers throughout the synthetic rubber, oil refining, and other process industries has been due to this readability, plus the records for long-time dependability which these simple all-metal thermometers have established. Literature giving complete specifications on all models gladly furnished on request. Weston Electrical Instrument Corp., 618 Frelinghuysen Ave., Newark 5, N. J.

**Weston** *All Metal*  
TEMPERATURE GAUGES

When inquiring specify CP A1049 — see information request blank, pgs. 2-3

## MAKE MANPOWER MORE PRODUCTIVE...

Add Faster Handling Methods with "WELD-BILT" Equipment



"Weld-Bilt" experience and knowledge of materials handling methods and equipment has added valuable *bonus* to production

operations in many plants — by cutting time and labor in handling methods. A careful survey of *your* operations, adaptation of standard equipment or designing of new equipment, may promise similar savings for you! Write for details.

"Weld-Bilt" Hydraulic Lift Truck. Handles heavier loads easier. Built for strength, mobility and durability, Exclusive *Horizontally-Mounted* hydraulic unit. Capacities, 2500 to 10,000 lbs.

### WEST BEND EQUIPMENT CORP.

226 WATER STREET, WEST BEND, WISCONSIN

MATERIALS HANDLING ENGINEERS

Hydraulic Lift Trucks, Two and Four-Wheel Trucks, Tying Machines, Skid Platforms, Barrel Trucks and Racks, Portable Elevators and Special Equipment

When inquiring specify CP A1049 — see information request blank, pgs. 2-3

**DUST**  
**THE BREEDER OF  
ABSENTEEISM**

**Parsons**  
**VAL BAG**  
**DUST ARRESTORS**  
**CHANGE the PICTURE**

Statistics prove that back of most absenteeism in plants is sickness and back of most of the sickness is factory dust and dirt. Proper dust control and that means Parsons Oval Bag dust arrestors, will instantly cure most of the present day absenteeism and along with that increase your production beyond the present peak. Parsons Oval Bag dust arrestors, modern in every respect and equipped with many exclusive features afford not only employee protection but protection for plant equipment and buildings. Why not call in a Parsons engineer to check into your dust problem, no obligation whatever. Write and we will be glad to send you a copy of our dust control bulletin "Mastery of the Air," it's free.

**PARSONS ENGINEERING CORP.**  
2845 EAST 79th STREET • CLEVELAND, O.

When inquiring specify CP A1050 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When inquiring specify CP A1047 — see information request blank, pgs. 2-3



## IDEAS

### Simplified Molded Ball-Cock Valve

*Injection-molded of polystyrene using only 4 ounces where 40 ounces of material were required in metal type*

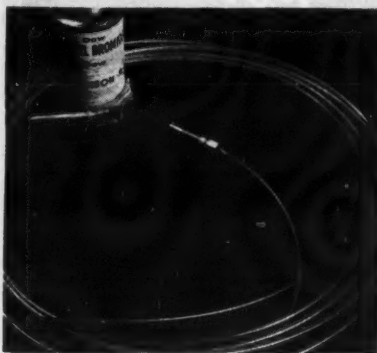


LIGHT WEIGHT PLASTIC VALVE

machined, drilled, tapped, and threaded by hand before assembly. The molder is Plastics & Rubber Products Co. (Photo & Data — Bakelite Corp.).

### Simplified Boxcar Fumigation

*Applicator and plastic tubing permits methyl bromide gas to be introduced to cars and vaults*

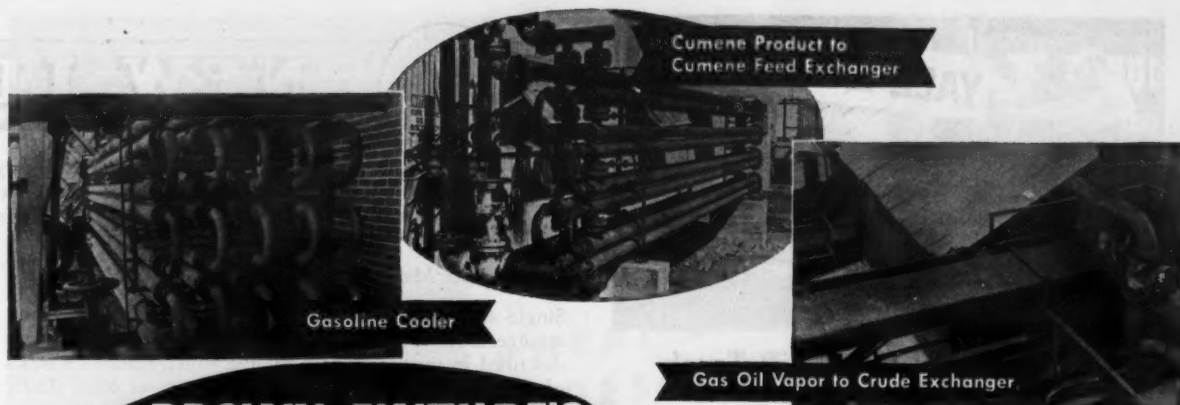


APPLICATOR and can of methyl bromide

methyl bromide in the applicator which punctures the can and allows the gas to escape. This simplified method allows overnight fumigation, a time saving factor when vast quantities of foods must be protected against infestation. Photo shows plastic tubing of translucent Saran applied to the applicator. The end of the tubing is plugged with an ordinary bolt with two small holes drilled on the sides of the sides of the tubing near the plug, which allows the gas to escape to either end of the car above the load. This apparatus may also be used in vault fumigation. The chemical resistance of the tubing is an important factor in this application and its flexibility simplifies installation and handling. (Dow Chemical Co., Midland, Mich.)

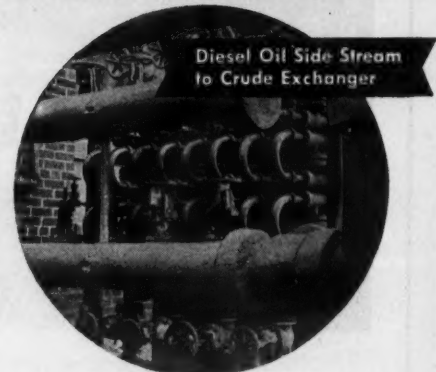
A simplified molded ball cock valve which has only two moving parts as compared with twelve in the original are being injection molded of Bakelite polystyrene. Difficulty of metal replacement for worn and corroded valves suggested the use of plastic with a ninety per cent saving in weight. Four ounces of polystyrene are used where forty ounces of material were formerly necessary. Parts for two complete units are injection-molded every thirty-five seconds. Production costs are greatly lowered as in the case of metal valves each part was cast, machined, drilled, tapped, and threaded by hand before assembly.

The greatly increased shipment of food-stuffs and other materials has prompted the application of plastic tubing to fumigating operations. A new applicator is being manufactured that permits fumigation from outside the car, simply by placing one pound can of



## ..is based on Performance

● Illustrated herewith are some—but not all—the Brown Sectional Heat Exchanger installations made—one after another—by just one concern—based on the outstanding performance of earlier installations. Brown Sectional Hairpin Exchangers with their high heat transferring efficiency, and trouble free operation are available in a number of standard sizes,—with different numbers and depths of fins to meet different requirements. The sections mount easily into tight, compact "banks," assure positive inspection and easy maintenance,—meet every requirement of the engineering, operating and maintenance departments. Fully descriptive literature, recommendations, and quotations furnished promptly.

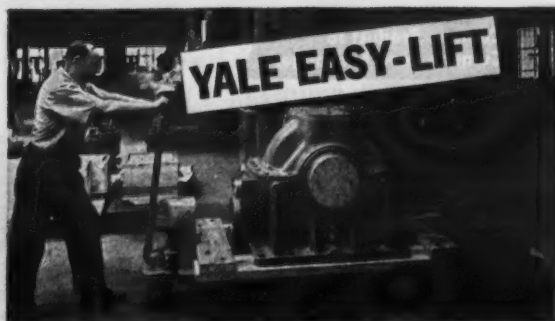


## THE BROWN FINTUBE co.

119 FILBERT STREET • ELYRIA, OHIO

MANUFACTURERS OF INTEGRALLY BONDED FINTUBES AND FINTUBE HEAT EXCHANGERS

—When inquiring specify CP A1051 . . . see information request blank, pgs. 2-3—



### A Light Duty Hand-Lift Truck That's Easy to Operate . . .

Hundreds of industrial plants have found Yale's "Easy-Lift" Trucks the ideal answer to their materials handling problems.

This multi-stroke Hand-Lift Truck is sturdily constructed; has reinforced solid steel deck; roller bearings; free-steering, non-flying handle; protected lifting mechanism. Available in 2,500 and 3,500 lb. capacities.

An easy, fast-operating truck, Yale's "Easy-Lift" is built for strength, stability and long life. Write for circular.

THE YALE & TOWNE MANUFACTURING CO.  
4530 Tacony Street • Philadelphia 24, Pa.



When inquiring specify CP A1052 — see information request blank, pgs. 2-3



## NEW LITERATURE ★

The following literature has been issued recently by manufacturers of the products discussed and is available to chemical process manufacturing executives on request. Address requests to the publishers by using handy request form, pages 2-3, or write to the manufacturers direct.

### Single and Multi-stage Steam Jet Vacuum Pumps

Single-stage and multi-stage steam jet vacuum pumps, their arrangement, applications, performance characteristics are described in thirty-two page catalog which features a series of diagrammatic drawings which by means of color clearly indicate principles of operation. Among the applications listed are filtration, distillation, absorption, drying, mixing, vacuum packaging. The various arrangements listed include: Single-stage pumps — in which the entire compression (or vacuum) is obtained in a single diffuser; two-stage vacuum pumps — in which compression is obtained by means of two exhausters operating in series (such as the non-condensing) or in conjunction with jet, barometric or surface inter-condensers, surface after-condensers and removal pumps; three stage and hydro-steam-vacuum pumps; four stage for extremely high vacuua. A section is devoted to high vacuum deodorizing apparatus with steam jet vacuum booster in connection with deodorizing apparatus for vegetable oil and animal fats. Also of interest is a detailed drawing and description of a high-vacuum mash cooling apparatus for vacuum flash cooling of grain mash in alcohol distilleries, eliminating the need for double pipe coolers, drop tubs and chemical refrigerants. One of the latter

sections describes high-vacuum refrigerating apparatus. Vacuum refrigerating apparatus of this type has been furnished for cooling water, sugar syrup and other solutions among a number of applications. Capacities of these units range from 10-500 tons. Bulletin 5-EH on request.

SCHUTTE & KOERTING CO., Dept. CP, 1261 North 12th St., Philadelphia, Pa.

When inquiring specify CP A1054 — see information request blank, pgs. 2-3

### Mixers Disperse, Grind, Emulsify in One Operation

Mixers employing a unique dispersion principle are the subject of a bulletin which presents a highly detailed explanation of operating and mechanical features. The mixers employ a stationary inner cylinder in which there are vertical slots which have outwardly projecting baffles. A mixing disc with curved radial ribs rotates at the bottom of the container. A large diagram clearly indicates the relation and sequence of operation of the parts and path of circulating material which is rapidly disintegrated and dispersed to a finely divided and homogenous state so that an unusual intensity is attained. Used for complete

## Simplicity Gyrating Screens



Simplicity Gyrating Screens are available in 63 different sizes or models.

"Write for further information"

View shows a battery of five Simplicity 3' x 6' Single Deck Screens, part of sixteen units operating in a Western starch plant. These screens are used for germ separation, for clean-up and for the various washing operations. Feed is at the rate of 90 gallons per minute per each machine equipped with 150 mesh cloth.

Using Simplicity Gyrating Screens in place of reels enabled this company to handle a 52% greater grind and at the same time reduce the amount of starch in the wash tailings by 20%.

**SIMPLICITY ENGINEERING COMPANY**  
DURAND, MICHIGAN

For Canada: Watrous Limited, Brantford, Ontario

When inquiring specify CP A1053 . . . see information request blank, pgs. 2-3



An outstanding plastic pipe for the laboratory, Saran is resistant to most acids and alkalis, to heat up to 175°. It weighs only 1/4 as much as iron pipe, yet is tough and durable.

One of the most striking features of Saran pipe is its ease of handling, being joined by a quick welding process or by threading.

It will be worth your while to get the whole story, now, of Saran and its benefits to the chemical laboratory. Write us today for the Saran Pipe Booklet.

\*Licensee of the Dow Chemical Company

**ACADIA** *Synthetic* **PRODUCTS**  
Processors of Synthetic Rubber and Plastics  
Sheets • Extrusions Molded Parts

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Largest Independent Manufacturers and Cutters of Felt  
4035-4117 Ogden Ave., Chicago 23, Ill. • Branch Offices in All Principal Cities

When inquiring specify CP A1055 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## NEW LITERATURE

grinding, rapid wetting and dispersion of dry materials in liquids, for emulsification and for mixing several liquids together. The mixers may be built with steel jackets around the mixing tank or container to permit the circulation of steam or other medium for heating or cold water or brine for cooling. Simplified construction contributes to easy cleaning. Laboratory mixers featuring this design are also available. The latter pages are devoted to pictures and brief descriptions of barrel rolling machines, tumblers and portable agitators. Copies on request. Catalog 62.

ABBE ENGINEERING CO., Dept. CP, 50 Church St., N. Y.

When inquiring specify CP A1056 — see information request blank, pgs. 2-3

### Infrared System Embodies Closed Construction, Avoiding Dust and Glare

Baking, drying, preheating, dehydrating as performed by the "Evenray" system are all dealt with in detail in eight-page-two-color illustrated bulletin. Initial pages are devoted to thorough discussion of infrared principles, developments and important considerations in securing greatest efficiency. The "Evenray" system equipment is made to accommodate a wide range of infrared energy sources — both self-contained reflector type and the open reflector clear glass combination. However, sources must be of given specification for highest efficiency. The application and other requirements usually determine the style and wattage of infrared source for each individual installation. Reflecting surfaces of the system are gold plated. Housing assemblies are illustrated and drawings reveal the advantages of closed assembly construction avoiding glare which is annoying to workers and shielding material from cold drafts and dust. All wiring is in enclosed channel. The system is designed to meet any requirement of tunnel contours and size which conform best to the shape and size of the product in question. Among the advantages offered are savings in floor space, visible operation permitting continuous inspection of materials, worker comfort and instant production. Copies of "Economical Utilization of Infrared Radiant Energy" on request.

FOSTORIA PRESSED STEEL CORP., Dept. CP, Fostoria, Ohio.

When inquiring specify CP A1057 — see information request blank, pgs. 2-3

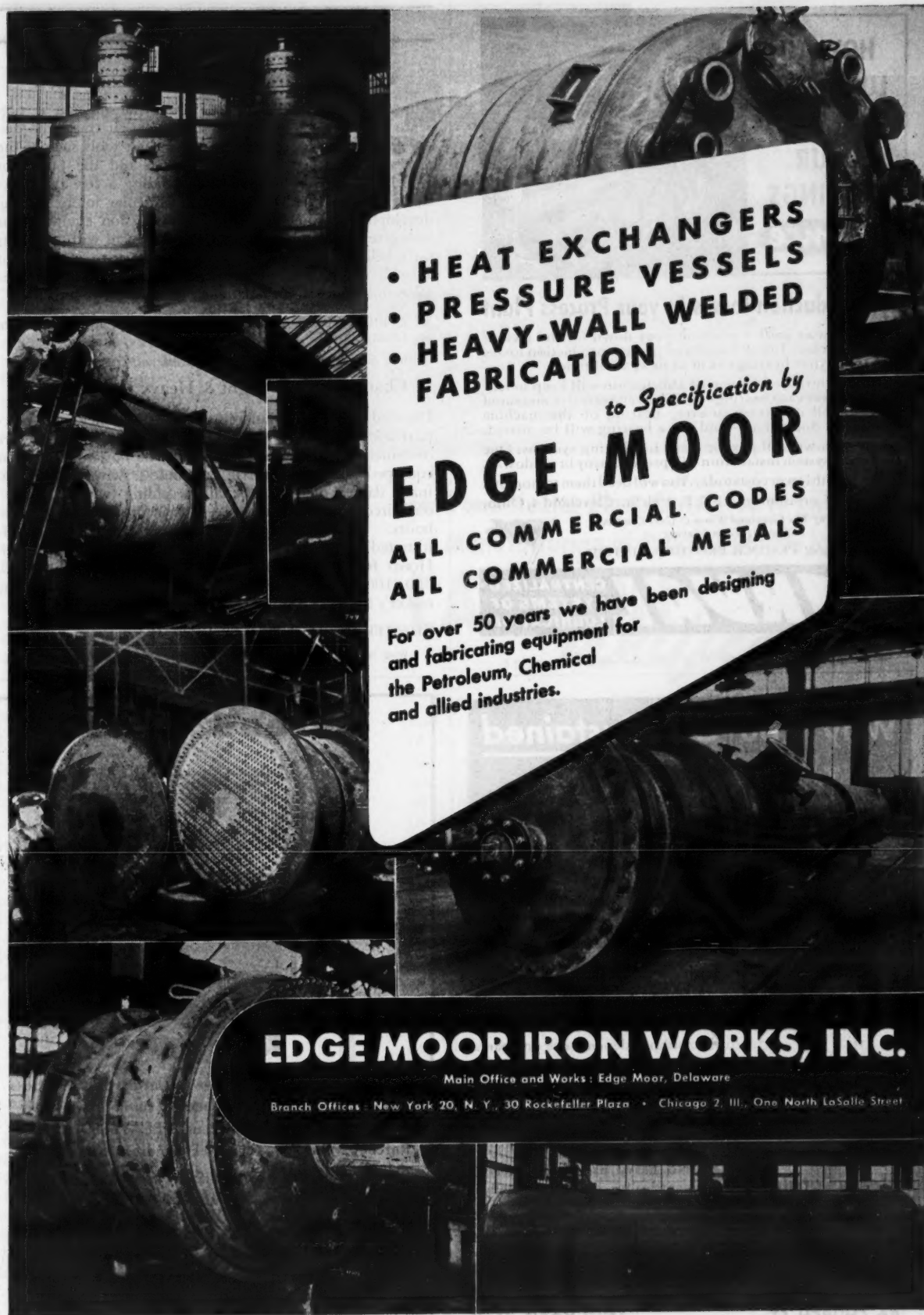
### Concrete Mixers With Bar Type Liners, Low Charging Height, Quick Handling Door

Complete specifications on four models of concrete mixers together with illustrations are included in four page bulletin. Diagrammatic treatment of the large pictures of these various models emphasize outstanding features of construction and operation. Design is identical in all sizes. Drum heads are of heavy steel plate electrically welded to the rolled steel shell, and with the heavy welded foot angles, form the mixer's base. The mixer shell is protected by hardened steel bar type liners (not castings) that are quickly replaceable at low cost. They are interchangeable. The curvature of the mixing blades is the result of long experiment and they are adjustable at the arms. The door in the drum is quick opening, tight locking. Another feature is exceptionally low charging height. Mixers illustrated include truck mounted mixer; v-belt drive and gear head motor drive units are both shown. Copies of bulletin on request.

STEARNS MFG. CO., Dept. CP, Adrian, Mich.

When inquiring specify CP A1058 — see information request blank, pgs. 2-3

JANUARY-FEBRUARY, 1945



• HEAT EXCHANGERS  
• PRESSURE VESSELS  
• HEAVY-WALL WELDED FABRICATION

*to Specification by*  
**EDGE MOOR**  
ALL COMMERCIAL CODES  
ALL COMMERCIAL METALS

For over 50 years we have been designing and fabricating equipment for the Petroleum, Chemical and allied industries.

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Branch Offices: New York 20, N. Y., 30 Rockefeller Plaza • Chicago 2, Ill., One North LaSalle Street

When inquiring specify CP A1059 . . . see information request blank, pgs. 2-3

## HOW TO LUBRICATE ALL OF YOUR BEARINGS *at once*



### Stop production losses in your Process Plant

**DON'T** wait until a machine goes down for the lack of lubrication. Install Farval and prevent production losses by keeping your bearings as fit as new, at all times.

A Farval Centralized System of Lubrication will keep unfailing watch over each bearing—will deliver a positive measured charge of oil or grease to every bearing on the machine in less than one minute—and not a bearing will be missed.

One breakdown will pay for many lubricating systems. One lubricating system installation will prevent many breakdowns. Get ready with lower costs today. You will need them tomorrow.

The Farval Corporation, 3257 E. 80th St., Cleveland 4, Ohio.

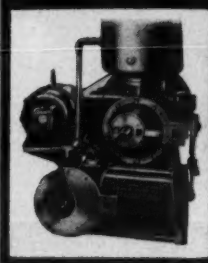
Affiliate of The Cleveland Worm & Gear Company,  
Industrial Worm Gearing

In Canada: PEACOCK BROTHERS LIMITED

**FARVAL** CENTRALIZED  
SYSTEMS OF  
LUBRICATION

When inquiring specify CP A1060 — see information request blank, pgs. 2-3

## Why You Get Sustained Top Vacuum with



## BEACH-RUSS Type RP PUMPS

1. Slow Pump Speed, 200 R.P.M. — permits more effective oil sealing between rotating parts.
2. Direct positive rotary motion without dependence on gears or springs.
3. Double Bank of Exhaust Valves in series prevents air in-leakage from atmosphere back into the pump.
4. No heavy parts rotating eccentrically—hence practically no vibration.

Vacuum to 10 microns—capacities to 750 c.f.m.

Write  
for  
New Catalog  
No. 80  
It's Free

**BEACH-RUSS COMPANY**  
46 CHURCH ST. NEW YORK, N. Y.

When inquiring specify CP A1061 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Outline of History of Power Transmission

An outline of the history of power transmission is presented in a fifty page pocket size book. It traces the discovery and development of man's earliest tools such as the lever, the inclined plane, the wedge and the pulley or wheel. Numerous illustrations, including a few reproductions of ancient drawings are of particular interest. The development of modern power transmission equipment is also given interesting and practical treatment with emphasis on v-belt drives. Origin of the v-belt drive is discussed as well as its many applications. Numerous illustrations show many actual installations. Copies on request.

MULTIPLE V-BELT DRIVE ASSN., Dept. CP, 140 S. Dearborn St., Chicago 3, Ill.

When inquiring specify CP A1062 — see information request blank, pgs. 2-3

### Chain Hoists — Light & Heavy Duty Models

Detailed descriptions and illustrations together with practical instruction on proper operation and maintenance are contained in twelve page bulletin. The hoists are Timken equipped and the powerful frictionless swivel hook eliminates danger of the load chain becoming twisted. A special direct positive oiling system is incorporated into these hoists. Models in capacities from 1/4 to 10 tons are illustrated and complete specifications conveniently tabulated. Hoists for speedy handling of lighter loads — 200, 500, 700, 1000 pounds are also shown as well as some of the maker's trolleys. Copies on request.

CHESTER MFG. CO., Dept. CP, Lisbon, Ohio.

When inquiring specify CP A1063 — see information request blank, pgs. 2-3

## Thread Bolts?



This patented dieholder—with large opening below die for instant clearance of turnings—is available for either the Nos. 2 or 3 BEAVER Drophead Ratchet Pipe Threaders. Eliminates torn threads due to chips packing in the die.

Write for Catalog 44

**BEAVER PIPE TOOLS**  
145 REVIEW AVENUE  
WARREN, OHIO

When inquiring specify CP A1064 — see information request blank, pgs. 2-3

## WHEN ONE SPARK MEANS FIRE...



## JUSTRITE MEANS REAL SAFETY

Justrite Safety Products offer the safe means of handling dangerous materials. The Justrite Safety Can and Safety Filling Can reduce hazards when working with volatile liquids. The Justrite Oily Waste Can stores oily grimy waste safely.

These Justrite Safety Products carry the approval of Underwriters' Laboratories, Inc. and Associated Factory Mutual Fire Insurance Companies.

Write today for complete information

**JUSTRITE MANUFACTURING COMPANY**  
2063 N. Southport Avenue, Dept. B-5, Chicago, Ill.

When inquiring specify CP A1065 — see information request blank, pgs. 2-3

## THIS BOOKLET

Tells WHY and HOW  
**CARDOX**  
FIRE EXTINGUISHING SYSTEMS



Learn how: five fire extinguishing requirements are met in a single system; how systems are engineered for the specific hazards covered; how carbon dioxide is given enhanced fire extinguishing performance; how carbon dioxide is released in mass discharge at high rate of application; how one hazard or many can be protected by a single system. Illustrates various types of hazards and type of application required for each. Ask for Bulletin 1694.

**CARDOX CORPORATION**  
Bell Building, Chicago 1, Illinois

When inquiring specify CP A1066 — see information request blank, pgs. 2-3



**Free — Send for it Today!**



Allis-Chalmers' new unit sub Check List gives clear, concise answers to power distribution problems. Taking up each item in the sequence proper to engineering a unit substation, this new 24-page booklet reduces unit sub planning to its simplest possible form. To get complete information, write for B6325 now! ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN

A 1812

When inquiring specify CP A1067 — see information request blank, pgs. 2-3

### Are Engineers Fussy? "PUMPS by Aurora" Don't Mind

Every pump job is IMPORTANT. That's why we build ONLY fine pumps. The distinguished war record of Aurora Pumps is your assurance that post-war progress, too, will be aided by these superb performers.



Aurora Deep Well Turbines for all conditions—4" to 24"



Type AD Hor. Split Case, Two Stage Centrifugal



Type OD Hor. Split-Case Double Suction Single Stage Centrifugal



Type GMC Close-Coupled Centrifugal

**APCO TURBINE-TYPE PUMPS**—the simplest of all pumps. Ideal for small capacity, high head duties. Silent, compact and lasting.



APCO Horizontal Condensation Return Unit



NSA Aurora Centrifugal Sump Pump



APCO Single Stage Turbine-Type

Write for  
CONDENSED CATALOG  
OR



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**AURORA**  
PUMP COMPANY

62 Loucks Street, AURORA, ILLINOIS

When inquiring specify CP A1068 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Filters, Mixers, Storage Tanks and Vacuum Bottle Fillers

Liquid handling equipment for a wide variety of requirements is presented in detail in twenty page booklet. Initial pages are devoted to descriptions and illustrations of asbestos disc filters used for such liquids as chemicals, pharmaceuticals, cosmetics, alcohol, wines, whiskies, liquid foods, water, syrups, extracts, vinegars. The asbestos filter sheets employed are neutral and free from harmful ingredients and of course can be used in other than the maker's equipment. They are available in ten different grades. Filters are available for filtering quantities of less than one gallon per minute up to 100 gallons per minute. A few turns of hand wheel provides efficient, complete closure. Pump and motor on most filters so arranged that they can be used independently for transfer purposes without filtering the liquid. Filters employing hard rubber, instead of bronze, nickel, silver, chrome or tin plated. A square plate and frame filter for prefiltering before using asbestos disc filter is also shown. It uses cloth, cloth and paper or cloth and filter aid. A utility unit is offered which is designed for use with any and all types of filtering mediums. In addition to filters, several pages are devoted to portable mixers, side drive type mixers and storage tanks. Most of the remaining pages are devoted to presentation of three types of vacuum bottle fillers. Features include continuous vacuum assuring instantaneous flow of liquid into bottles; fully automatic overflow; bottle size flexibility; cracked or defective bottles will not fill; adjustable non-drip spouts fill liquid to any desired height uniformly; all units are portable; bottle guides assist in quickly placing bottles in proper filling alignment. All fillers are equipped with an air-cooled, self-oiling rotary vane type motor driven vacuum pump. Copies of Catalog Number 12 upon request.

ERTEL ENGINEERING CORP., Dept. CP, Kingston, N. Y.

When inquiring specify CP A1069 — see information request blank, pgs. 2-3

### Cold Formed Heads

Sixteen page catalog contains specifications tables, price lists and other essential data for determining requirements for tank heads. Flanged and dished standard type heads, flanged and dished ASME type heads, flanged heads only are dealt with in individual sections. These heads are formed in solid dies, insuring accurate diameters, and smooth flanges. Other types of heads are available also.

COMMERCIAL SHEARING & STAMPING CO., Dept. CP, Youngstown, Ohio.

When inquiring specify CP A1070 — see information request blank, pgs. 2-3

## From the PRACTICES OF PEACE TO THE PRACTICE OF WAR



### Stove and Heater Plant Converted to Efficient Manufacturing of Practice Bombs by

## LAMSON Unification

When one of the great West Coast makers of stoves and heaters was awarded a contract for the production of 100 lb. practice bombs, it faced many problems. Materials handling was one of the most difficult. Moving raw materials to initial processes and semi-processed materials through operations was especially challenging, due to the irregular shapes of the component parts—and of the bomb itself. Second—no single building large enough for the complete job was available. Lamson engineers, employing a series of overhead and belt conveyors, linked two buildings into one smoothly operating unit, moving hard-to-handle materials to the job in either building.

### Let Lamson Help You with Reconversion

When you plan for reconversion, ask LAMSON ENGINEERS to go to work first before your machines are placed. Let them help you get complete unification of your departments into one swiftly functioning unit.

To LEARN How your plant can be turned into an efficient production line set-up, send today for the story of what LAMSON has done for others. The booklet entitled, "CASE HISTORIES—To Aid You in Blueprinting Conversion to Peace" is yours for the asking.

**LAMSON CORPORATION**

750 LAMSON ST., SYRACUSE 1, N. Y.

When inquiring specify CP A1071 — see information request blank, pgs. 2-3

AGAIN AVAILABLE!

## BENJAMIN TWIN-FLO Fluorescent Lighting Units



### with Porcelain Enamel Reflectors

Again available are the manifold advantages of fluorescent lighting with Benjamin porcelain enamel Twin-Flo units. Again available to you are the extra safety factors of strength and durability of Benjamin Lifetime Porcelain Enamel which reduce depreciation to a minimum; lower maintenance costs; and provide a sustained year-after-year light reflecting efficiency

unequaled by any other reflecting surface.

Twin-Flo fluorescent units are engineered by Benjamin for coordinated operation of all component parts. Warranted to comply with all recognized illumination, electrical and mechanical standards. Write for Data Sheets today. Benjamin Electric Mfg. Co., Dept. LL, Des Plaines, Ill.

**BENJAMIN**

Lighting Equipment

Distributed Exclusively Through Electrical Wholesalers

When inquiring specify CP A1073 — see information request blank, pgs. 2-3

## GLASS TANKS

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FEWER  
TANK  
TROUBLES



Use "Pittsburgh" Glass Tanks to handle tough solutions. These tanks are impervious to most acids and alkalis, even hot chromic acid. They are made in transparent or colored opaque glass—glass which is specially tempered to withstand hard usage and sudden temperature changes.

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GLASS TANKS BY "PITTSBURGH"

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Please send me, without obligation, your free folder giving full details on Glass Tanks by "Pittsburgh."

Name.....

Address.....

City..... State.....



PITTSBURGH PLATE GLASS COMPANY

When inquiring specify CP A1073 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Characteristics of Acid Regenerated Carbonaceous Zeolites

Recent bulletin is descriptive of some important theoretical considerations demonstrating characteristics of acid regenerated carbonaceous zeolites. It summarizes extensive research work when using sulphuric acid as the regenerant and shows the characteristics of various salts, singly and in combination. The paper is of value to those interested in the theoretical considerations of this unique method of water conditioning, or to those interested in the purchase of this type of equipment for boiler feed or process requirements. Copies on request.

COCHRANE CORP., Dept. CP, 17th & Allegheny Aves., Philadelphia 32, Pa.

When inquiring specify CP A1074 — see information request blank, pgs. 2-3

### Dual Fuel Burning System for High Efficiency With Either Gas or Oil or Both

Advantages of dual fuel burning systems are graphically emphasized in a full color bulletin. Detailed drawing shows installation and operating features of typical installation. The system uses any fuel oil or gas of 500 btu and higher; it is possible to change fuels without changing piping or burner inserts; exact fuel-air proportions automatically maintained at all size fires; no steam or compressed air is required; burns both gas and oil at same time with automatic proportioning; one air valve controls amount of fire, either gas or oil.

THE NORTH AMERICAN MFG. CO., Dept. CP, 2910 E. 75th St., Cleveland, Ohio.

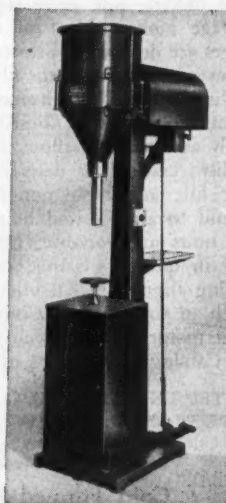
When inquiring specify CP A1075 — see information request blank, pgs. 2-3

### Fast, Accurate, Flexible POWDER PACKAGING BY TRIANGLE

Triangle Auger Packers accurately and tightly pack powdered materials in bags, cartons, cans, and bottles. Speed, flexibility, economy, accuracy and simplicity are built into every model. Triangle Packaging Engineers can plan your complete set-up to speed production, reduce labor and cut costs.

A complete line of Fillers, Weighers, and Carton Sealers is available to handle almost every type of dry product.

Write for literature.



MODEL U  
AUGER PACKER

Production 15 to 30 packages per minute. Range 1 oz. to 5 lbs. One operator required. Extreme accuracy.

Other models  
for higher production.

**TRIANGLE PACKAGE MACHINERY CO.**

917 NO. SPAULDING AVENUE, CHICAGO

OFFICES IN PRINCIPAL CITIES, UNITED STATES AND CANADA

When inquiring specify CP A1076 — see information request blank, pgs. 2-3

HUNDREDS of THOUSANDS  
in Daily Use!

### IDEAL Rechargeable Flashlight STORAGE BATTERY

... and here's why:

**BRIGHTER** Always a "like new" battery;  
**STEADIER** No gradually fading light!  
**LONG LIFE** Recharged regularly, can outlast 400 dry cells.

**ECONOMICAL** Can save up to \$10 a year per flashlight.  
Fits standard flashlight cases; takes place of two 1 1/4" size D dry cells.

**GUARANTEED**  
IDEAL Battery chargers plug into any electrical outlet. Also available for connecting to automobile ignition.

**PROMPT  
DELIVERY**



Write for  
Bulletin BB 444

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Sole Offices in all Principal Cities.  
In Canada: Irving Smith, Ltd., Montreal, Quebec

When inquiring specify CP A1077 — see information request blank, pgs. 2-3

Many Engineers Ask:  
"CAN RODNEY HUNT SUPPLY ROLLS  
FOR Special MACHINE WE ARE  
BUILDING?"

The answer is: "Yes, that's just what we do!"  
We build hundreds of such rolls each year. Engineers tell us the size and purpose of the rolls needed for a new machine — and we do the rest. Usually an exchange of ideas between machine builder and roll builder is of great help in getting the best design and construction. Our "Shaf-tite" patented constructions plus years of experience are of far-reaching practical value. Tell us your problem.

**RODNEY HUNT MACHINE COMPANY**  
273 Maple Street  
Orange, Massachusetts



When inquiring specify CP A1078 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



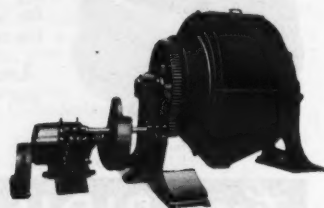
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TUBE MILLS  
ROD MILLS  
JAR MILLS  
DRY BLENDERS  
BOWL MILLS  
CUTTERS  
IMPACT MILLS  
DEFIBRATORS**

Maximum quality output in wet or dry grinding, mixing or processing at any temperature, even under vacuum or pressure, of paints and coating materials, chemicals, minerals, metal powders and ceramics. That's the keynote of all Abbé Mills, whether it be in a one quart jar or 3,000 gallon ball mill. Enough types and sizes for every requirement. Get the Abbé equipment catalog.

Ball Mill for dry grinding, equipped with dust proof housing.



**ABBÉ ENGINEERING CO.**  
46 Church Street New York 7, N. Y.

When inquiring specify CP A1079 — see information request blank, pgs. 2-3



**OWEN BUCKETS**  
2080 Broadway, New York 11, N. Y.  
Branches: New York, Philadelphia, Chicago, Dallas, etc.

**A MOUTHFUL AT EVERY BITE**

When inquiring specify CP A1080 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Pallet And Platform Transporters

Platform and pallet type hand lift trucks embodying advanced features for ease, safety and precision in operation are shown in actual plant scenes handling various operations in new bulletin. The chasis features a streamlined design. Driving and control mechanisms are protected by a steel hood. Front wheel power drive unit has double reduction roller chain drive. Drive wheel is mounted to axle on large diameter adjustable Timken bearings with tire of standard press on type. Motor 12 v. Brake is positive mechanical, controls in front steering handle, controls in steering handle, two forward, two reverse speeds. Steering with full power control in all positions through approximately 210 degrees. Pallet transporter has easily operated heavy duty high pressure pump utilizing foot pedal. Heavy duty hydraulic ram in combination with pump furnishes positive lift. Platform transporter similarly equipped. Rubber tired trail wheels available if desired. These transporters make it possible for unit loads to move electrically throughout each process as the operator merely guides the load. On pallet models standard established fork lengths are minimum 30 inch to maximum 60 inch in two inch steps; fork height  $3\frac{1}{8}$  inches. Lifting height from low to high position  $3\frac{3}{4}$  inches. Elevated height  $7\frac{1}{8}$  inches. Platform lengths 36 - 72 inches; heights in low position 6, 7, 9, 11, inches. Special features at slight extra cost include dust-proof protection, spark enclosed protection, warning signal, lock in main circuit. Pallet transporter 4000 lbs. capacity; platform 4000 and 6000 lbs.

THE AUTOMATIC TRANSPORTATION CO., Dept. CP, 131 W. 87th St., Chicago 20, Ill.

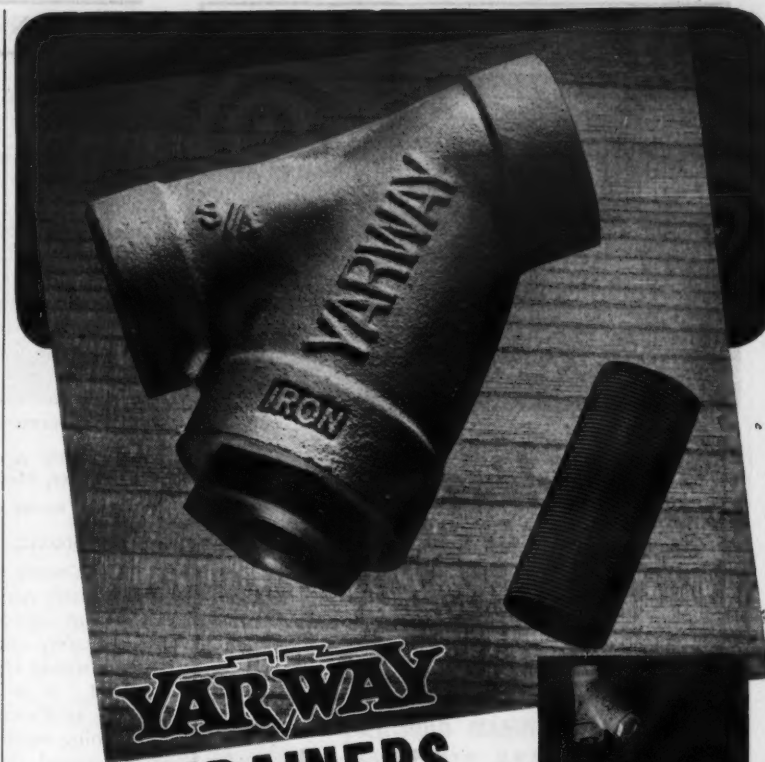
When inquiring specify CP A1081 — see information request blank, pgs. 2-3

### 5" 3-Jaw Universal Lathe Chuck

Bulletin announces and illustrates new universal three jaw chuck with body of high grade, high tensile strength semi-steel. Two sets of jaws are furnished, one for internal and the other for external work. They are made of specially treated alloy steel for toughness and strength. Available in five inch size. Mounting adapter furnished with each chuck. It is easily machined to fit lathe on which it is to be used. Copy of bulletin on request.

IDEAL COMMUTATOR DRESSER CO., Dept. CP, Sycamore, Ill.

When inquiring specify CP A1082 — see information request blank, pgs. 2-3



## YARWAY STRAINERS

### "Police the Pipelines"

YARWAY STRAINERS are selling by the thousands because they are better engineered for the service.

"The Screen is the Thing"—a high-grade, woven Monel wire screen that stops the dirt, lets fluids flow freely.

Then, too, purchasers like the body finish—Cadmium plating inside and out for protection against corrosion.

And last but not least, it is "Easy to Clean" having a steel blow-off bushing, precision machined with straight thread. Screen and bushing come out together—go back together, automatically aligning.

Six sizes,  $\frac{1}{4}$ " to 2" for pressures up to 600 lb serve practically all strainer needs.

Sold by over 100 Mill Supply Houses. See your Supply House or write for Bulletin S-200.

**YARNALL-WARING COMPANY**  
125 Mermaid Avenue PHILADELPHIA 18, PA.

## YARWAY STRAINERS

When inquiring specify CP A1083 — see information request blank, pgs. 2-3



## Machines That Turn Out Precision-Made Wire Cloth

**NEWARK**  
for ACCURACY

IF woven wire is to be used for screening there's every reason to insist upon accurately made cloth. If cloth is not precise in its mesh or space, of what use is it as screening medium?

NEWARK FOR ACCURACY is not an empty phrase. From the machines in our modern factory, comes wire cloth that cannot be surpassed for its accuracy in every detail — wire gauge, mesh, space, crimping.

Quality is evident throughout the entire range of NEWARK Wire Cloth.

**Newark Wire Cloth Company**  
336 Verona Avenue Newark 4, N. J.  
1-NWC-3

When Inquiring specify CP A1084 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Selection & Application of Leather Belting

A non-technical approach to the subject of belting selection and application is followed through an interesting and practical fifty-six page manual on this subject. It offers data, charts, and specifications to support the following headings: how to pick the right leather belt for the job, including information on tannages, the figuring of belt dimensions, etc.; how to decide between modern group drive and automatic tension (pivoted motor base) drive; how to compare the efficiency and cost of multiple V-belt drives and flat leather automatic tension drives; how to figure flat belt prices; how to install flat leather belts properly. The manual includes a catalog of leather belting and accessories. Copy on request.

GRAFTON & KNIGHT CO., Dept. CP, 356 Franklin St., Worcester, Mass.

When Inquiring specify CP A1085 — see information request blank, pgs. 2-3

### Non-toxic, Non-flammable, Non-slip Degreaser

Liquid water soluble degreasing and cleaning agent which is entirely non-flammable as well as non-toxic is described in four page bulletin. Because of its non-toxic properties and safety characteristics it has been accepted as a stock item within U. S. Navy Yards, Air Depots and many Army Posts. It is approved by Underwriters' Laboratories as well as Factory Insurance Assn. of Hartford. Used in cleaning machinery, removing oil and grease from floors, in general cleaning and in washing trucks. Bulletin on "Penetone" on request.

THE PENETONE CO., Dept. CP, Tenafly, N. J.

When Inquiring specify CP A1086 — see information request blank, pgs. 2-3

THE **ONE GLOVE**  
FOR **TOUGHEST** SERVICE  
IN OILS, ACIDS, CHEMICALS, ETC.  
with **MAXIMUM** HAND PROTECTION

CUFFS DOWN  
ADD TWO  
INCHES



CUFFS UP  
PREVENT  
LIQUIDS FROM  
RUNNING DOWN ARMS

**SURETY  
SURESEAL**

**SUPER-RESISTANT SYNTHETIC**  
You get up to 14 times the service life of natural rubber or other synthetics in Surety Sureseal Industrial Gloves. They're hard to snag, resist abrasion. Rubber allergies and dermatitis are avoided by use of the new Sureseal Gloves. Surety patented Turn-Cuffs add extra protection, too.

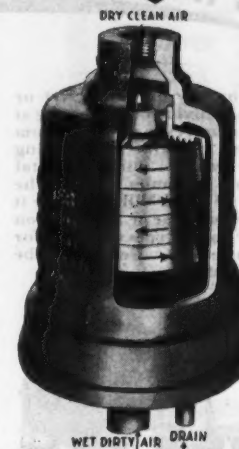
**SEND FOR YOUR Surety INDUSTRIAL GLOVE SELECTION TODAY!**  
Eliminate guesswork in specifying and purchasing industrial gloves. See at a glance the right glove for the specific job. Dial selector describes properties of ALL TYPES of gloves in use today. Write, now.



THE **Surety** RUBBER COMPANY  
CARROLLTON, OHIO

When Inquiring specify CP A1087 — see information request blank, pgs. 2-3

*You Don't Buy Trouble  
With This Air Cleaner!*



**Logan ARIDIFIER**  
Dries and Cleans Compressed Air



Busy plants prefer the Aridifier because it not only thoroughly removes moisture, oil and dirt from compressed air, but also functions indefinitely with a minimum of attendance. With the Aridifier — which employs centrifugal force to remove contamination — all that need be done is to empty the trap periodically. There are no filters, bags or other elements which require frequent cleaning and which generally operate at progressively decreasing efficiency.

Aridifiers are available in sizes for 3/4" to 10" pipe. Ask for Bulletin 543.

Logan Engineering Co.  
4900 Lawrence Ave., Chicago 30, Ill.

When Inquiring specify CP A1088 — see information request blank, pgs. 2-3



**STEAM-  
JET  
EJECTORS**

Single-stage ejector serving a sterilizer unit.

- ★ A steam-jet ejector is one of the simplest methods for removing air, gases and vapors from condensers and vacuum chambers. There are no moving parts.
- ★ Ingersoll-Rand furnishes ejectors to handle most any quantity of gas or vapor at any absolute pressure down to 50 microns Hg. Ask the I-R engineer for details.

4-286

**Ingersoll-Rand**  
11 BROADWAY NEW YORK CITY

When Inquiring specify CP A1089 — see information request blank, pgs. 2-3





## Stanzoil Gloves

### Better Protection—Longer Wear

DuPont neoprene, as processed by Pioneer, assures you a tougher-wearing more comfortable flexible glove, safe for the most sensitive hands. It resists damage by oils, acids, caustics, lasts 3 to 7 times as long as rubber gloves did, provides better protection at lower cost per hour's wear. All needed styles, sizes, weights; black and white. For economy and more safety for valuable hands, write today for Stanzoil facts.



Synthetic Rubber Division  
**THE PIONEER RUBBER COMPANY**  
239 Tiffin Rd., Willard, Ohio, U.S.A.  
New York • Los Angeles

OVER 25 YEARS OF QUALITY GLOVE MAKING

When Inquiring specify CP A1090 — see Information request blank, pgs. 2-3

## Designed to Fit Your Particular Operating Conditions



When demands for air and gas volume are variable, yet *constant pressure* is imperative, choose a centrifugal type

### BILLYMYRE TURBO BLOWER

If your air or gas pressure conditions are changeable, but you must maintain *constant volume*, you need a positive displacement

### POTTSTOWN ROTARY BLOWER

To be sure of economical operation, low upkeep expense, long service, investigate either of the two types of Allen Billymyre Blowers. Since we make both types, our recommendations are impartial. Write for full information.

ALLEN BILLYMYRE COMPANY  
445 Fayette Avenue Mamaroneck, N. Y.

**ALLEN BILLYMYRE**  
BLOWERS AND EXHAUSTERS

When Inquiring specify CP A1091 — see Information request blank, pgs. 2-3

## NEW LITERATURE

### All Welded Quick Opening Door For Use on High Pressure Units

An all welded quick opening door for use on high pressure or vacuum processing equipment featuring unusual simplicity and ease of operation is described in illustrated four page bulletin. Locking of the door is accomplished by a split ring, fitting in a circular groove into the door frame. For closing, this ring is expanded into the frame groove and the load is evenly distributed over the whole circumference of the frame. For opening, the ring is contracted to clear the door frame. A safety device has been incorporated into the door so that pressure cannot be applied to the vessel if locking ring is not properly seated. To accomplish this, a valve connected to the inside of the vessel with attached interlocking spacer is mounted to the door. This valve cannot be closed unless locking ring is properly seated which will allow interlocking spacer to fit between the abutting edges of locking ring. The door itself is mounted on anti-friction bearings for ease of operation. These doors are for manual or hydraulic operation; in accordance with code and pressure requirements. Information on pressure vessels in which these doors provide fast, economical operation on request. Bulletin 55-T.

STRUTHERS WELLS CO., Dept. CP, Warren, Pa.

When Inquiring specify CP A1092  
— see Information request blank, pgs. 2-3

### Fibre Drums for Dry Bulk Food Products

Fibre drums for dry bulk products such as soap powders, cleaners, coffee, cocoa, spices, powdered eggs, sugar, corn starch, baking powder, powdered milk, salted nuts, and similar products are cataloged in four page bulletin. The stock sizes usually used for all the products aforementioned and others are indicated and table gives gallon capacity, cubical content, tare weight approximate quantity to C. L. not tested and net weight packing limit for each size drum. These drums are light, attractive and waterproofed. The baked enameled metal headings give positive protection against moisture absorption from damp platforms and concrete floors. Their all kraft sulphate sidewalls are constructed to pass bursting tests from 950 pounds to 1850 pounds per square inch. Capacities from two to thirty-two gallons. (Other drums are available for weights exceeding 200 pounds.) An important feature is the quick positive seal provided by special sealing lugs requiring no special tools.

THE CONTAINER COMPANY, Dept. CP, Van Wert, Ohio.

When Inquiring specify CP A1093  
— see Information request blank, pgs. 2-3

## SUB-ZERO TEMPERATURE PROCESSING

May be  
YOUR  
ANSWER

There is no reason for believing that processing in any manufacturing field should be carried on only at or above atmospheric temperatures. Recent research has shown conclusively that many products are definitely improved when processed at accurately controlled sub-zero temperatures. Yours may be one of them.

There is one positive way to determine whether or not this is true. Install Kold-Hold sub-zero unit in your plant or laboratory and conduct your own experiments. Kold-Hold engineers may have some worthwhile suggestions.

**KOLD-HOLD MANUFACTURING CO.**  
434 NORTH GRAND AVENUE  
LANSING 4, MICHIGAN



**KOLD-HOLD**

When Inquiring specify CP A1094 — see Information request blank, pgs. 2-3



EDMONT Coated Fabric Gloves are the factory favorite because:

- ★ **LIQUID-PROOF.** Full protection against oils, greases, chemicals, caustics, etc.
- ★ **WON'T SNAG OR TEAR.** Tough American-made rubber coating. Seams sealed against wear.
- ★ **QUICKLY ON AND OFF.** No bind, flexible, efficient and safe for every use.
- ★ **WEARS FAR LONGER.** Specially compounded rubber bonded to sturdy fabric resists severe abrasion. Work-tested for extra service.
- ★ **KNIT WRIST AND GAUNTLET STYLES.** Men's and women's sizes. Available through leading Mill Supply, Rubber Goods and Safety Equipment Distributors.

**Fabric-Lined**  
Edmont 801 Orange Street  
Cochecton, Ohio **RUBBER GLOVES**

When Inquiring specify CP A1085 — see information request blank, pgs. 2-3



Anderson Air Release Valve, sometimes referred to as Air Trap, used to vent air from water or gas from any liquid in a pipeline or closed valve.



Super-Silvertop Inverted Bucket Steam Trap can be piped as an elbow or straight-in-line. In either case saving from 8-12 parts and 60 minutes time per trap installation.

## By the makers of SUPER-SILVERTOPS

The makers of Super-Silvertops provide a Steam Trap for every trap purpose. . . . More than that, this company makes air release valves and self-cleaning pipe line strainers. Here's the Anderson Steam Specialties lineup:

**STANDARD STEAM TRAPS** in 8 sizes. All 8 can be

equipped with thermal air eliminator.

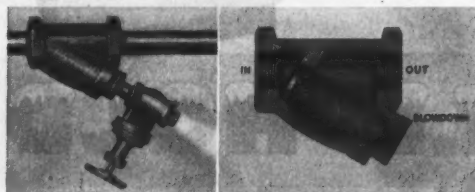
**OPEN FLOAT AND THERMOSTATIC TRAPS** in 6 sizes.

**FLOAT TRAPS** in 7 sizes.  
**AIR RELEASE VALVES** in 10 sizes.

**SELF-CLEANING PIPE LINE STRAINERS** in 10 sizes.

All of these traps, valves and strainers have been proved best by years of successful use. . . . And all are described in detail in the book "How To Choose A Steam Trap." Send for it!

**THE V. D. ANDERSON COMPANY**  
1954 West 96th Street Cleveland 2, Ohio



Anderson Pipeline Strainers will protect your control equipment from scale, grit and sediment. Self-cleaning, easy to install, and inexpensive.

When Inquiring specify CP A1096 — see information request blank, pgs. 2-3

## NEW LITERATURE

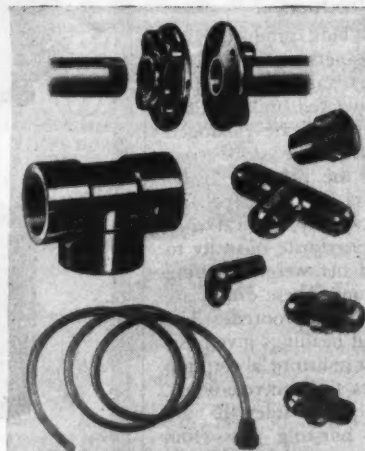
### Pneumatic Ejectors for Conveying Bulky Materials, Sewage Sludge, Water Treatment Chemicals

The various applications of a pneumatic ejector known as the "Transporter" are given thorough discussion in an eight page bulletin (Number 4500) which features a group of photographs showing installations of the equipment, emphasizing its features. An interesting summary of the development of the pneumatic ejector by Sir Isaac Stone is included in the explanation of the design and operation of this device. Its use covers many fields where heavy, bulky materials can be transported through pipe lines. In addition to such long established applications as handling sewage sludge, water treatment chemicals, garbage, ashes, suggested services are with food products, packing house wastes, pulp and paper products, agricultural products, tannery wastes, construction materials, powdered coal. The "Transporter" is a compressed-air operated machine, fully automatic in operation. No moving parts come in contact with the material and there are no valves in discharge pipe and it is completely emptied at each operation. There are other ejectors also offered in the bulletin for use where the special features of the "Transporter" are not required. "Transporter" units range from 10 to over 200 cubic foot displacement. Compressed air for operation can be furnished by plant air supply or by maker's own rotary air compressor also illustrated and described. Copies of bulletin on request.

YEOMAN BROS. CO., Dept. CP, 1433 N. Dayton St., Chicago 22, Ill.

When Inquiring specify CP A1097 — see information request blank, pgs. 2-3

## — PLASTIC — Pipe, Tubing and Fittings



**SARAN PIPE**  
½" to 4" I.P.S.

**SARAN SCREWED FITTINGS**  
(Molded)

½" to 2" I.P.T.  
**WELDING FITTINGS**  
(Fabricated)

½" to 4"

**SARAN TUBING**  
⅜" to ¾" O.D.

**CELLULOSE ACETATE TUBING**  
⅜" to 2" O.D.

**SARAN S.A.E. FLARED FITTINGS**  
(Molded)  
⅜" to ¾" O.D.  
Tube Sizes

## GRINNELL

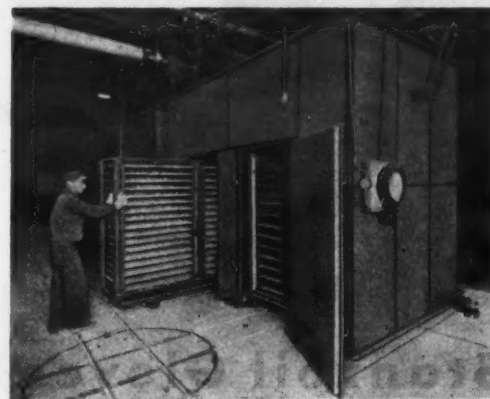
WHENEVER PIPING IS INVOLVED

GRINNELL COMPANY, INC.

Executive Offices, Providence 1, Rhode Island

**SALES OFFICES:** Atlanta 2, Ga.; Charlotte 1, N. C.; Chicago 9, Ill.; Cleveland 14, O.; Houston 1, Tex.; Los Angeles 13, Cal.; Minneapolis 15, Minn.; New York 17, N. Y.; Oakland 7, Cal.; Philadelphia 34, Pa.; Providence 1, R. I.; St. Louis 10, Mo.; St. Paul, Minn.; San Francisco 7, Cal.; Seattle 1, Wash.

When Inquiring specify CP A1098 — see information request blank, pgs. 2-3



### "National" Truck Type Tray Dryers

For batch drying of various chemicals in large quantities. Recirculating system carries heated air to each tray in sufficient volume and at proper velocity to assure uniform drying of each tray load, without dusting. Illustration shows battery of dryers especially designed for material having high initial water content and requiring maximum uniformity in drying. May be steam, gas or electric heated.

Chemical Dryers  
of All Types  
and Sizes



Special Drying  
and Heating  
Equipment

**THE NATIONAL DRYING MACHINERY CO.**  
2709 N. HANCOCK STREET, PHILADELPHIA 33, PA.

When Inquiring specify CP A1099 — see information request blank, pgs. 2-3



*What vacuum  
do you want?*

*Get it with  
ELLIOTT  
Steam Jet  
EJECTORS*

Single-stage ejectors as illustrated, can pull low to medium vacuum. Two, three, or four-stage ejectors get high vacuum. Elliott ejectors are connected up almost as easily as a pipe fitting. No moving parts, no maintenance troubles. Tell us the vacuum you want, steam and cooling water conditions, process requirements.



**ELLIOTT  
COMPANY**

Heat Transfer Dept.  
JEANNETTE, PA.

District Offices in  
Principal Cities

(U-373)

When Inquiring specify CP A1100 — see information request blank, pgs. 2-3





## Take a Tip from the ANCIENT WARRIOR

He carried only one shield. That was his defense against enemy attack. By placing it right, that one shield was enough. That's the way with your plant equipment.

On most jobs you need Stainless Steel only on the exposed surface side.

### INGACIAD STAINLESS-CLAD STEEL

has for 12 years proved its protective efficiency in hundreds of America's finest industrial plants. In addition to stretching your "Stainless Dollars," it offers the

additional advantages of easier fabrication and better heat diffusion in kettles and other vessels where heat is applied.

Write for special IngacIad folder and Manual of Fabricating and Welding Procedure.

#### INGERSOLL STEEL & DISC DIVISION

BORG-WARNER CORPORATION

310 South Michigan Ave., Chicago 4, Illinois  
Plants: Chicago, Ill. • New Castle, Ind. • Kalamazoo, Mich.



#### PRODUCTS OF BORG-WARNER

When Inquiring specify CP A1101 — see information request blank, pgs. 2-3

## LOOK INTO GAST ROTARY AIR MOTORS

CAN'T  
BURN OUT  
by overloading.  
Positive  
starting in  
any position.

When you "Look Into Gast", you will be convinced that Gast Rotary Design offers unequalled advantages in operating and maintenance economy, and long, trouble-free performance. Gast Rotary Air Motors embody all the features of Rotary Design, plus the exceptional construction features illustrated here. For applications where compressed air is available and explosion proof equipment is required, it will pay you to investigate Gast.

ALWAYS  
EFFICIENT.  
Automatic take-up for wear. No springs. Composition vanes held against cylinder wall by centrifugal force.

COMPACT  
...Unbelievable power. Simple, economical operation.

NO  
SPARKS...  
explosion proof.  
Meets every safety requirement.

Write today for  
FREE CATALOG

### GAST ROTARY AIR MOTORS • COMPRESSORS VACUUM PUMPS

GAST MFG. CORP., 101 HINKLEY ST., BENTON HARBOR, MICHIGAN

When Inquiring specify CP A1102 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Barrel And Four Wheel Hand Trucks For Food Handling

A fifty-six page catalog offers a selection of handling units including warehouse trucks, trailers, dollies, platform skids, lift jacks, wheels, axles, casters. The two wheeled hand trucks include those classified as small bag, heavy bag, barrel, butter-egg-milk case. There are also four wheel hand trucks. Molded-on rubber-tired, semi-steel and cast iron wheels are available as well as swivel and rigid casters. Copy available on request.

THE HOWE SCALE CO., Dept. CP, Rutland, Vt.

When Inquiring specify CP A1103  
— see information request blank, pgs. 2-3

### Jacketed Pipe & Fittings

Jacketed pipe and fittings are pictured and complete specifications listed in eight page two colored folder. Included in the wide selection shown are a motorized valve used for remote control or automatic control in connection with maker's fluidometer system of automatic metering. The center pages are devoted to a series of blueprints of jacketed elbows, tees, jacketed crosses, line strainers, three way cocks, two way cocks, pumps and valves. Bulletin S-44.

HETHERINGTON & BERNER, INC., Dept. CP, 701 Kentucky Ave., Indianapolis, Ind.

When Inquiring specify CP A1104  
— see information request blank, pgs. 2-3

### Electric Furnaces

A large selection of industrial furnaces are illustrated and described in forty page catalog. Included in the various sections are those on box furnaces made in twenty standard sizes in seven standard widths for use with or without protective atmospheres; industrial and laboratory pot furnaces. A wide selection of laboratory units — combustion tube, multiple unit muffle, hot plates and crucible types are also illustrated and described.

HEVI DUTY ELECTRIC CO., Dept. CP, Milwaukee, Wis.

When Inquiring specify CP A1105  
— see information request blank, pgs. 2-3

### Long Distance Pneumatic Conveyor

Two-page bulletin — illustrated — concisely details features of positive long distance pneumatic conveyor. Charger parts are slow moving. Material is automatically introduced into conveyor pipe line against pressure therein. Conveyor used for sawdust, bark, grain, chemicals and many bulk materials. No dust — air tight; modest power requirements.

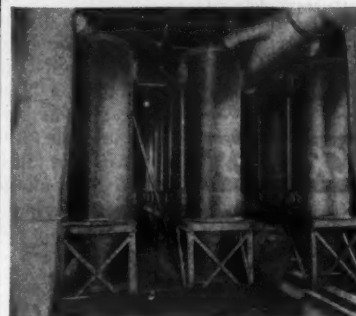
ALLINGTON & CURTIS MFG. CO., Dept. CP, Terre Haute, Ind.

When Inquiring specify CP A1106  
— see information request blank, pgs. 2-3

(It will pay to  
Consult DRACCO  
Engineers  
about

# DUST!

No matter what your dust problems may be — the entire plant or dust from one machine or operation — it will pay to have expert advice. DRACCO Engineers are especially qualified to advise you. They have over 30 years' experience eliminating dust hazards of every description in all types of industries. Why not write today?



(Many handling jobs  
can be done  
BETTER with

## DRACCO PNEUMATIC CONVEYORS

Many large and small Plants have found DRACCO Pneumatic Conveyors the BEST and CHEAPEST way of handling chemicals grains or granular materials. They are FLEXIBLE — will carry material several hundred feet — if necessary under or over streets or railroad tracks or from building to building. Let us reduce your handling costs to a MINIMUM.



## DRACCO handle your complicated FABRICATING JOBS

One of the many complicated fabricating jobs produced by our Metal Fabricating Division is the turret lathe base with oil pan which is illustrated. Our Engineers have solved problems of this kind for many. Consult them regarding your complicated metal fabricating jobs. We handle work from light gauge up to 1/4" plate — gear guards, machine stands and bases, cabinets and many other products.



For Further Information Write

## DRACCO CORPORATION

4060 E. 116th St., Cleveland 5, Ohio New York Office: 130 W. 42nd St.

### DUST CONTROL EQUIPMENT PNEUMATIC CONVEYORS • METAL FABRICATION

When Inquiring specify CP A1107 — see information request blank, pgs. 2-3

## JOB-TESTED PERFORMANCE ASSURED WITH LINK-BELT VIBRATING SCREENS



Whether the work calls for sizing, dewatering or recovering all kinds of wet or dry materials, you can depend on Link-Belt Screens to do the job. They are known for their high efficiency and low-cost operation, the result of over 20 years' experience in the design, manufacture and application of screens of all types. Made in a number of standard sizes—single or multiple decks, with or without enclosures, for light, heavy or extra-heavy duty. Complete data given in Books 1762 and 1977. Specify Link-Belt and be assured of "job-tested-performance."

**LINK-BELT COMPANY**  
2045 W. Hunting Park Ave., Philadelphia 40  
300 W. Pershing Road, Chicago 9  
Offices in Principal Cities

9743

### LINK-BELT Vibrating SCREENS

When inquiring specify CP A1108 — see information request blank, pgs. 2-3

## Equipment for Production

### Intimate Blending Increases Effectiveness of Insecticides

*Systems adapted to various powders finer than 100 mesh; high capacity production at modest power requirements*

**Uses** — These blending systems are adapted to intimate blending of fine powders; mixtures of finer than 100 mesh. Of particular interest is application described in detail here in which the effectiveness of insecticides is increased by such thorough blending. (This blending method is also for kalsomine and pigments, dyes, wood flour with pigments and plastics, plastic powders and fillers, etc.)

**Features** — Thoroughly blended insecticide is more effective; easier to apply; prevents stoppage of spray jets; equal effectiveness at all points of coverage; no areas where dilution by neutral ingredients reduce potency.

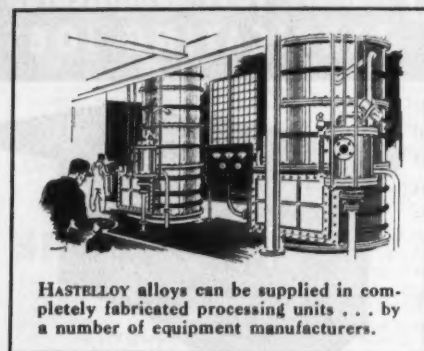
**Operation** — An installation like that shown on cover is producing insecticides at Michigan Fertilizer Co., Lansing, Mich. The system includes a sifter inlet to eliminate compacted lumps in the feed (resulting from storage), followed by a brief pre-mixing in the conventional manner. In cases where a liquid is to be included it is sprayed from per sulphate, 20% calcium arsenate.

a manifold during the premix period. There follows a thorough agitation of the premix as it passes in a thin layer through a speed disc blender which assures positive

intimate dispersal of very small persistent lumps. The blender product drops to an agitated serrated mixer which maintains free flowing characteristics, quickly lost when such powders are allowed to settle. It also acts as a storage reservoir for sacking. The method is applicable to a number of products. In addition to producing a product of great uniformity, high capacity is attained at low power costs. Though operated by a single 15 HP motor, production rates in excess of five 500 pound batches/hr are reported. Another installation in operation for many months has been producing a variety of dusts in large volume including Cuprotol 6: 6% neutral copper and talc; Lime-Copper 80-20: 80 lime, 20 mono copper sulphate; Kryocide 50: 50% kryocide, 50% talc; Organocide R40L2: 0.4 rotenone, 2.0% lethane, balance talc; Sulphur-Lead-Arsenate-Lime 80-0-10: 60% lime, 10% mono-copper sulphate, 20% calcium arsenate.

**Description** — These blending systems for insecticides are available in standard and special sizes. A system with a capacity of 500 pound batches can be installed in a floor space 4x10 feet on one floor where there is a 12 foot clearance. It uses 15 HP motor. Larger models may require two or more floors. Systems now in operation range to 4000 pounds per hour. The accompanying drawing shows a general arrangement of the system and sequence of operations: (A) Feed Lump Removal. (B) Premixer. (C) Blender. (D) Aerator. (E) Discharge Gate. (F) Motor. (G) Clean-out Panels. (H) Air Vents. Bulletin 844 describes and illustrates all equipment used in the system in great detail, reviews the subject of insecticide

## FOR RESISTANCE TO $HCl$ , $H_2SO_4$ , $AlCl_3$ — Use HASTELLOY Corrosion-Resistant Alloys



HASTELLOY alloys can be supplied in completely fabricated processing units . . . by a number of equipment manufacturers.

Agitators  
Autoclaves  
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Columns . . . are  
typical examples.



Or, if you build equipment, HASTELLOY alloys are available in standard mill forms as well as in castings to meet your specifications.

Sheets  
Plates  
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For more information write to us at Kokomo, Ind. or our nearest district office for the booklet, "HASTELLOY Corrosion-Resistant Alloys," and price list.

BUY UNITED STATES WAR BONDS AND STAMPS

### HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

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### HIGH-STRENGTH NICKEL-BASE ALLOYS FOR CORROSION RESISTANCE

The word "Hastelloy" is a registered trade-mark of Haynes Stellite Company.

When inquiring specify CP A1109 . . . see information request blank, pgs. 2-3

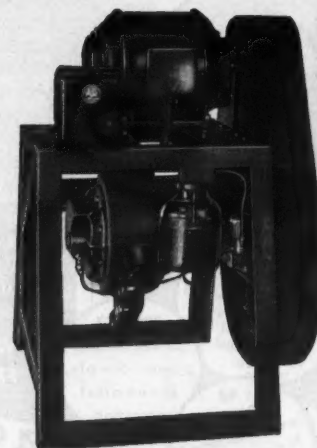
### LAMMERT ROTARY

## VACUUM PUMPS

VACUUM TO 0.02 MM. OF BAR.  
MODELS FOR 3-580 C.F.M.

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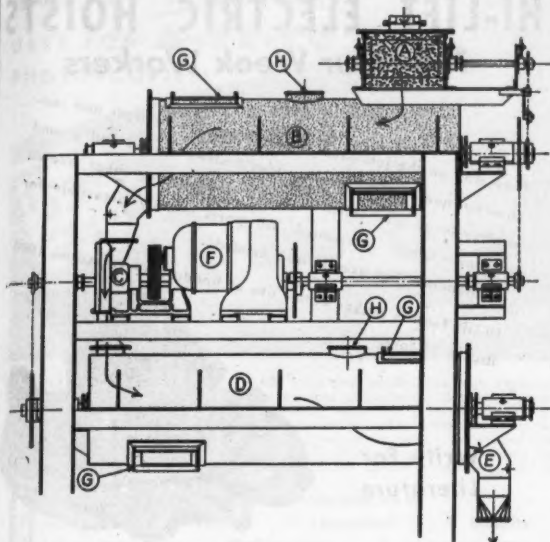


LAMMERT & MANN CO.  
215-21 N. WOOD ST CHICAGO 12

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## PRODUCTION



MIXER-BLENDER-AERATOR ASSEMBLY

mixing and blending and contains a series of photographs showing the difference between intimate blending and conventional mixing as revealed in spatula tests.

SPROUT-WALDRON & CO., Dept. CP, Muncy, Pa.

When inquiring specify CP A1111 — see information request blank, pgs. 2-3

## Gaskets, Seals, Washers of Corrosion Resistant Compound

*Compar synthetic resin suitable replacement for rubber in many essential molded parts*



PARTS especially made to requirements

bottles and cans, ball mills and spray guns and oil cups on hydraulic presses.

**Features** — Conformity to flexibility, elasticity and abrasion resistance requirements. Exceptionally long service life; inert to organic solvents.

**Description** — The "compars" are a group of coal-lime-stone and air derivatives. Now produced for a wide variety of industries; specially compounded and engineered for each application.

RESISTOFLEX CORP., Dept. CP, Belleville, N. J.

When inquiring specify CP A1112 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

**Uses** — Among the various applications of "compar" (vinyl resin derivative) is that for washers, seals, gaskets, diaphragms and similar flexible moldings for use on instruments, oil and chemical pumps, hydrocarbon and rubber cement

**T**HOSE are the main reasons why PC Foamglas is in increasing demand among men who are facing insulation problems—and who also keep a sharp eye on operating and maintenance costs. With PC Foamglas, first cost is last cost.

Because it is cellular glass, PC Foamglas is impervious to attack by moisture, fumes, vermin, acid atmospheres—elements that frequently cause other insulating materials to lose efficiency. That is why its insulating properties remain unimpaired through the years. Freedom from re-

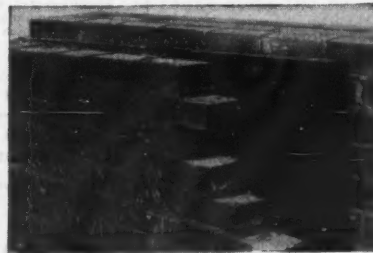
pairs and replacement keeps maintenance costs at a minimum . . . an important economy.

In walls and floors, on roofs and equipment, strong, rigid PC Foamglas becomes an integral part of the structure.

Helpful information on various insulation problems is available in booklet form. Just check and mail the convenient coupon. We shall be glad to forward free copies of the booklets you want. Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.



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*FIRST COST IS LAST COST*



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Roofs..... Walls..... Floors.....

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City..... State.....

## PC FOAMGLAS *Waterproof Fireproof* INSULATION

When inquiring specify CP A1113 . . . see information request blank, pgs. 2-3



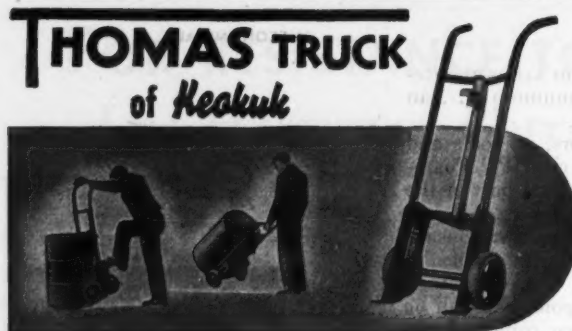
**Remove Tramp Iron from**  
CHEMICALS, PLASTICS, RUBBER, COAL, SAWDUST,  
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**PROTECT** your irreplaceable processing machinery from  
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4 WHEEL TRUCKS



2 WHEEL TRUCKS



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## Safety One Man BARREL TRUCK

- Trucker never touches barrel
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- Sliding two-in-one chime hook
- Safe — no backstrain
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Safer, faster, easier way for one to handle barrels,  
drums, bags up to 1000 lbs. Chime hook engages  
rim and cast steel prongs slide under drum instant  
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it! Rubber tired wheels. Available now.

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THOMAS TRUCK & CASTER CO.

1300 MISSISSIPPI RIVER, KEOKUK, IOWA

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## PRODUCTION

### Live Center for Loads to 6 Tons

*Tolerance of .0000 to .0005; accuracy achieved by  
means of special bearing construction*

**Uses** — For handling heavy loads up to almost six tons.

**Features** — This center has a specified tolerance of .0000 to .0005.

**Description** — This center is identified as the Number 6MH. It handles radial loads up to 5750 pounds and thrust loads up to 8500 pounds; a special bearing arrangement is used. Two precision ball bearings in tandem support the spindle at the front; and two angular contact ball bearings; and two angular contact ball bearings support it at the rear of the housing. This arrangement also eliminates radial play and possible chatter. For positive protection of these bearings against the entrance of chips, dust, coolant or other foreign matter, two sealing rings are used. A unique feature of design is the ease in redressing the point. The center is simply inserted in the lathe tailstock with the retainer plug removed. Then a small steel rod is screwed into the threaded hole in the end of the spindle of the live center. By rotating the spindle point with this rod and by using a tool post grinder, accurate redressing of the points can quickly and effectively be made. This center is made with the No. 6 Morse Taper only. Shipping weight is approximately 20 pounds.

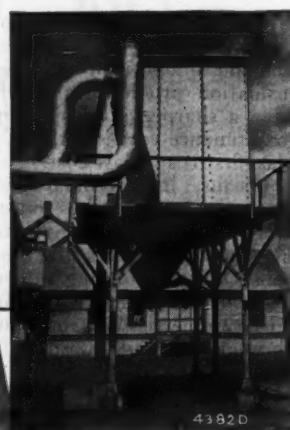
IDEAL COMMUTATOR DRESSER CO., Dept. CP, Sycamore, Ill.

When inquiring specify CP A1116 — see information request blank, pgs. 2-3

## SLY DUST Control

Adopted as  
STANDARD  
By Many Firms

Typical Sly Dust Filters on a standard support with walkway, with dust pipes leading to the filter. All Sly Dust Filters are of weather-proof construction for out-of-door installation. Standardized construction for low cost.



The Sly Dust Filter actually filters the dust out of the air by passing it through a series of cloth bags ingeniously arranged in a compact space within the filter case. The cleaned air contains no visible dust.

Sly Dust Filters comply fully with the requirements of the laws and regulations of the various states. This equipment is not expensive.

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98... Tell us your problem so that we can write you fully!

THE W. W. SLY MFG. CO.  
4754 Train Ave., Cleveland 2, O.

INDUSTRIAL DUST CONTROL

**SLY**

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## Northern HI-LIFT ELECTRIC HOISTS 168-Hour Week Workers

They stay on the job because they have the strength and construction quality. One piece welded frames—turned and ground shafts—large size roller bearings—machine cut heat treated gearing—splash lubrication. All parts readily accessible for maintenance that usually isn't needed.

Hi-Lift feature makes better use of headroom—capacities 1000 lbs. to 15 tons.

Write for  
Literature



NORTHERN ENGINEERING WORKS, 2605 Atwater St., Detroit, Mich.

## CRANES Northern HOISTS

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## CHEMICAL AND FOOD PLANTS INSTALLING BINS

Chemical and food industries are heavy buyers of N & F bins and conveyors for fast, efficient handling of bulky flowable materials. They found this equipment expedited handling of war contracts. What's more logical than to order for future use to help reduce production costs?

Stave or monolithic bins erected in any capacity

by expert crews. Guaranteed. Write us for specific

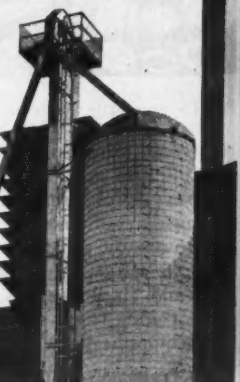
instances of chemical

plant and food industry

installations. Ask for our

catalog.

**THE NEFF & FRY  
COMPANY  
CAMDEN, OHIO**



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# 134 postwar WARTIME

## USES FOR A-PE-CO PHOTO-COPIES!



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In Canada: Railway & Power Engineering Corp., Ltd.

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# ALOYCO VALVES

## Maximum CORROSION RESISTANCE with TOP MECHANICAL PERFORMANCE



Aloyco Valves maintain positive action throughout their long lives. Easily taken apart and re-assembled, they can be quickly cleaned. Their better design, closer tolerances and smoother finishes result from specializing in the manufacture of stainless steel valves.

Made of solid stainless steel even to the bonnet bolting, their wide range of alloys permits attaining maximum corrosion resistance for particular conditions. Available for new installations under high priority and for maintenance and repair under M.R.O. regulations.

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Stainless Steel  
VALVES and FITTINGS

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LEVER THROTTLE GATE VALVES  
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ALLOY STEEL PRODUCTS COMPANY, INC.

1900 WEST ELIZABETH AVENUE — LINDEN, NEW JERSEY

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JANUARY - FEBRUARY, 1945

## PRODUCTION

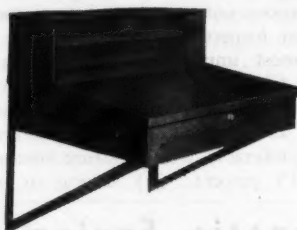
### Steel Wall Desks

*Easily attached to wall space, building column or end of shelving racks*

**Uses** — These steel wall desks are especially suited to the requirements of inspectors, timekeepers, checkers and others in similar capacities in processing plants.

**Features** — Desks are easily attached to any convenient wall space, building column or at the end of shelving racks.

**Description** — The model illustrated is Number 2131 — 17. It is 24 3/8" wide, 23 1/2" deep and 13" high. The attachment bracket is 12" high and is made of 7/8" x 7/8" angle steel. They have a 24 3/8" x 14" working surface, large storage compartment and three open compartments across the back of the desk. Each is equipped with a pencil tray on either side and a grooved lock with two keys. Finish is green baked enamel. They are shipped set up with the supportive brackets detached. Additional information on request.



WALL DESK with storage and open compartments

LYON METAL PRODUCTS, INC.,  
Dept. CP, Aurora, Ill.

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— see information request blank, pgs. 2-3

### Light Steel Construction

Light steel construction featuring use of panel sheets die-drawn, die-rolled, die-cut by special methods are described in four page bulletin. These lend themselves unusually well to assembly line production. Typical applications are in drying ovens, refrigerator units, oil purifiers, truck bodies, partitions, cabinets, guard rails, chutes, etc. Copies on request.

LINDSAY & LINDSAY, Dept. CP, 222 W. Adams St., Chicago 6, Ill.

When inquiring specify CP A1123  
— see information request blank, pgs. 2-3

### Respiratory Protection Guide

"A Guide to Selection of Respiratory Protection," is made available in convenient chart form in recently published circular. Data is given on ten basic types of hazards and lists the proper type of respiratory for each. Copies of this circular Number 944-700 on request.

E. D. BULLARD CO., Dept. CP, 275 8th St., San Francisco, Cal.

When inquiring specify CP A1124  
— see information request blank, pgs. 2-3

## FROM MIAMI TO THE HIMALAYAS PAN AMERICAN WORLD AIRWAYS DEPENDS ON BOWSER FUELING EQUIPMENT



—Pan American World Airways Photo

**End of the aerial Burma Road**—This plane, refueling after bringing a load of vital supplies over the Himalayas, is in the fleet of China National Aviation Corp., Pan American's affiliate in the Orient. This desolate setting is typical of the extremes in which Bowser Fueling Systems are working to help keep air transport operating.

Peacetime or wartime, in modern Miami or the remote Himalayas, Pan American World Airways can't take chances on fueling systems—for fuel must always be kept clean, dry, safe! Fueling equipment must be sturdy, dependable, accurate.

It's significant, then, that Pan American depends so widely on Bowser fueling units at its bases both here and overseas. Pan American Clippers are today flying the Pacific route to Hawaii and the Atlantic route clear to the Far East. Many bases are in desolate, remote areas where dependability and accuracy of equipment, incalculably important even in peacetime, are still more vital today.

That's why, of course, Pan American has chosen Bowser.

Dependability and accuracy, plus economy... that's why, too, chemical plants across the country are depending more and more on Bowser Exact Liquid Control equipment. Bowser Meters and Proportioners, for instance, have proved themselves indispensable in many operations from the standpoints of accuracy, uniformity of product, maintaining of records, economy of investment and of plant space, and speed of operation. Bowser Diatomaceous Filters provide increased filtration, longer filtration cycles, controlled quality, easier cleaning and economy of operation. Write for information. BOWSER, INC., Fort Wayne 2, Indiana.

### BUY WAR BONDS



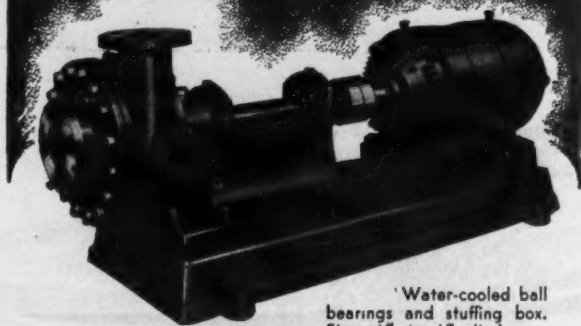
Not only has Bowser's war production earned the Army-Navy E... Bowser equipment has helped earn it for scores of other companies.



The Name That Means Exact Control of Liquids

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*For pumping -*  
**ACIDS • HYDROCARBONS  
 CONDENSATE • CAUSTICS  
 ORGANIC LIQUIDS  
 DOWTHERM • DIPHENYL  
 SLUDGES • BLACK LIQUOR**



Water-cooled ball bearings and stuffing box. Sizes 1" to 6" discharge.

## Quick Facts

### About **DAYTON-DOWD PROCESS PUMPS**

**WATER-COOLED BEARINGS** — Dual wall construction of bearing housings provides a water cooling chamber area, keeping all bearings cool when pumping high temperature liquids. Bearings are individually enclosed in a cartridge type housing, assuring positive and permanent alignment.

**WATER-COOLED STUFFING BOX** — A water-cooled chamber surrounds the eight rows of packing in the deep, long stuffing box. Provides extra protection when pumping high temperature liquids.

**NEW IMPELLER AND CASE DESIGN** — Ample impeller clearance is provided in this new pump design to efficiently and effectively handle any liquids that may contain crystals, grit, abrasives and sludges.

**EXCEPTIONALLY HIGH HYDRAULIC EFFICIENCY** — The inherent design characteristics of these single-stage, single-suction type pumps account for their exceptionally high operating efficiency. They provide reliable operation at low maintenance cost. Available with either enclosed or open impeller.

**CRITICAL METALS MINIMIZED** — Only the casing, two side plates and the impeller comprise the pump-end. Saves critical metals and lowers cost of corrosion-resisting construction.

**FREE CATALOG** — Write on your business letterhead for interesting FREE Catalog. Address: DAYTON-DOWD COMPANY, Quincy, Illinois.

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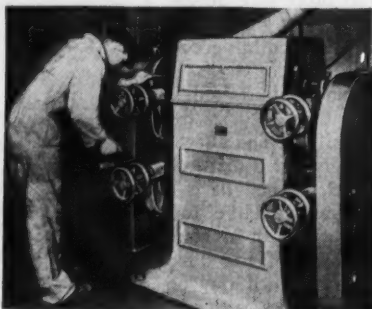
**CENTRIFUGAL AND TURBINE PUMPS**

When inquiring specify CP A1126 — see information request blank, pgs. 2-3

## PRODUCTION

### Modern Milling Processes In Soybean Oil Extraction

*Close control, profitable yield with compact simplified units; new solvent method of extraction offers new advantages*



ROLLER MILL . . grinds soybeans

**Features** — Savings in time, labor and production of high grade product with profitable oil yield of 14 to 16 percent. Two high roller mills give uniform grinding with minimum of fines. The various units used in drying, cooling are all designed for easy inspection and maintenance.

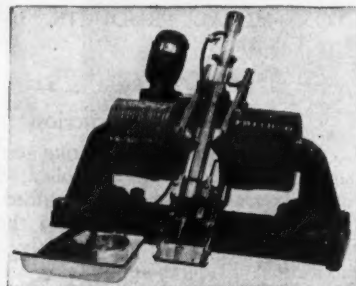
**Description** — The most important operations in the process include: (1) Cleaning the soybeans by passing them over an air blast separator with suitable screens for removal strings, straw and dust; (2) coarse grinding in two high roller mills preferably with moisture content of beans not exceeding 15 percent; (3) drying in rotary

**Uses** — The selection of equipment described here provides for setting up a highly efficient soybean processing plant for extracting oil by the expeller method and producing properly ground soybean meal.

## Dings Magnetic Equipment

**For Your  
Laboratory**

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**Separators:  
 Induced Roll  
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 Wet Type  
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 Tube Testers  
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Dings-Davis Tube Tester for determining magnetic content of ores. Gives quick, accurate answer in 10 to 15 minutes.

Dings Separators for laboratory use are usually scale models of commercial machines and will produce results obtainable in commercial practice.

Dings maintains a completely equipped Magnetic Laboratory for free magnetic analysis of everything from abrasives to zircon. You are invited to submit samples for magnetic test to determine magnetic content, type of separator to use, results obtainable, etc. For full details, write to Dings.

**NEW CATALOG** — No. 11, gives complete data on Dings Laboratory Equipment and the Dings Magnetic Laboratory.

Write for your copy.

**DINGS MAGNETIC SEPARATOR CO.**

515 East Smith Street • Milwaukee 7, Wis.

Separation Headquarters Since 1899

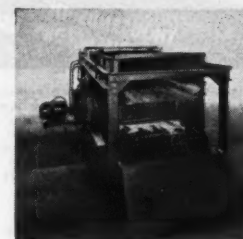
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## EXPAND the CAPACITY OF YOUR PLANT

**this easy, inexpensive way**

If the need for frequent cleaning of accumulated residue from filters is slowing-down your rate of production, here is a simple, easy, inexpensive way to overcome that condition.

Install a Robins Hydrex Screen in the production line ahead of the filters. The Hydrex Screen will remove a substantial percentage of solids from a fluid before it enters the filters, thus relieving those units of a goodly proportion of the work they now must perform.



Hydrex Screens often put production on a continuous basis. Interesting facts will be placed before you on invitation. When writing, please address Dept. CP-1.

ENGINEERS • MANUFACTURERS • ERECTORS

**ROBINS  
CONVEYORS  
INCORPORATED**  
 Founded in 1896 as Robins Conveying Belt Co.  
 PASSAIC • NEW JERSEY

MATERIALS HANDLING MACHINERY

For Material Aid in  
Materials Handling

...It's **ROBINS**

When inquiring specify CP A1128 — see information request blank, pgs. 2-3



**POWER OPERATED  
3-Way Valve**

No. 625—150-pound Three-Way Butterfly Valve with air cylinder positioner control and adjustable linkage.

Unequalled for quick control and wedge-type closure in interchange and mixing service, this R-S Three-Way Butterfly Valve offers simplified design, equal capacity with less weight and cushioned operation.

Readily adapted to elevated temperatures, manual or power operation, this valve is another example of R-S Engineering that has proved its superior efficiency in many services. Write for details and Catalog No. 14-B.

**VALVE DIVISION  
R-S PRODUCTS CORPORATION**  
 4531 Germantown Avenue • Philadelphia 44, Pa.

**R-S Streamlined  
BUTTERFLY VALVES**

When inquiring specify CP A1129 — see information request blank, pgs. 2-3



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ALVES

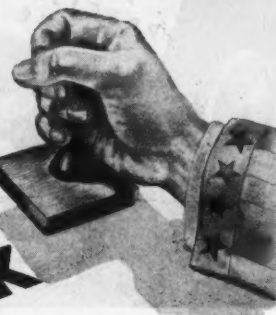
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VIEW

## No More Priorities ON ST. REGIS VALVE-PACKING MACHINES

*They offer  
maximum  
industrial packing  
efficiency and  
economy*

OK



All priority controls have now been removed from St. Regis Valve-packing machines.

These machines, plus St. Regis Valve Bags comprise a packaging system which reduces packaging costs while providing greater product protection. Here's why:

The tough St. Regis Multiwall kraft paper bag is factory-fastened top and bottom and has a specially designed filling valve in one corner. When the bag is filled by the filling machine, the internal pressure of the contents automatically closes this valve. The filling machines also accurately preweigh the contents of every bag.

St. Regis Bgs and bag-packing machines will be especially fitted to your needs. Write for full information today.

MULTIWALL

ST. REGIS PAPER COMPANY

New York: 230 Park Avenue

Chicago: 230 No. Michigan Ave.

Offices in Principal Cities

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EXPLOSION  
PROOFVAPOR  
TIGHT

## LIGHTING FIXTURES

Precision-built from designs developed in serving many of the biggest and best industrial, marine, transportation and recreational enterprises for more than forty years.

Line includes all forms of fixtures and fittings, circuit breakers, switches and factory assembled and tested panel boards for the control of welding, lighting, and power, shipped as a unit ready for use. Ask for the R & S 300 page catalog.

Since 1902



RUSSELL &amp; STOLL COMPANY

EXPLOSION-PROOF, WATER-TIGHT AND EVER-LOK RECEPTACLES, PLUGS, CONNECTORS, SWITCHES AND FIXTURES

125 BAYCLAY STREET - NEW YORK 7, N. Y.

30

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## PRODUCTION

dryers to moisture content of 3 percent; (4) extraction of the oil in continuous screw presses; (5) transfer of oil to settling tanks, thence to filter presses and to storage tanks. The two-high roller mills each have two sets of rolls, especially corrugated for soybean granulation. A roller chain differential drive provides positive control and silent operation and entire drive is enclosed in oil-tight casing. Grinding adjustments are easily made by means of convenient control wheels and quick throw-out levers regulate rolls without disturbing their grinding position. Entire unit operates from line power shaft or v-belt drives. In the dryers for handling soybeans after design permits bolting together one atop the other for savings in space. Running lengthwise inside the drying cylinder are large pipes, closed at one end. Placed within these large pipes are smaller pipes which are also somewhat shorter. Steam sent through the smaller pipes passes into the larger ones and returns to the exhaust end. Thus effective circulation is obtained. The solvent extraction method is more recent and its advantages as demonstrated in plants where it is already in use indicates its wide adoption when new plants are built or present equipment replaced. The solvent method consists simply of "dry cleaning" the soybean. Machinery used includes units to roll the beans into thin flakes, wash the oil from the beans with hexane, separate and recover hexane from the oil and the meal and cooking of the meal to make it most suitable for cattle feed. Further information of methods and equipment on request.

ALLIS CHALMERS MFG. CO., Dept. CP, Milwaukee 1, Wis.

When inquiring specify CP A1132 — see information request blank, pgs. 2-3

## THE Silent Operator

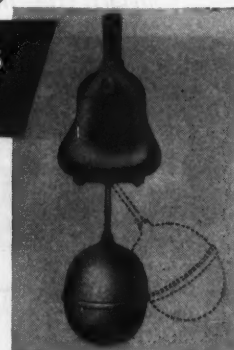
THAT CONTROLS  
BIN LEVELS...

### the TELLEVEL

The TELLEVEL Unit is designed to control the flow of bulk materials and liquids to and from bins, hoppers or tanks.

The swinging float ball, when contacted by rising or falling levels of material, automatically operates feeders, conveyors, gates and valves.

Eliminate spillage and waste of valuable storage space. Save the time and trouble of checking storage levels. Investigate possible TELLEVEL applications in your plant, today.



Write for Bulletin No. 440  
giving full engineering details.

STEPHENS-ADAMSON

MFG. CO.

Tellevel—Bin Level

Controls Car Loaders

Screw Speed Reducers

SealMaster Ball Bearings

Car Pullers Winches

11 RIDGEWAY AVE., AURORA, ILLINOIS

When inquiring specify CP A1133 — see information request blank, pgs. 2-3

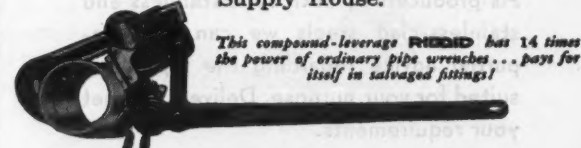
## Easier work, longer service



with this  
Efficient,  
Trouble-proof,  
Guaranteed

RIGID

● It's no accident that the RIGID is the favorite pipe wrench of millions of expert users. That unconditionally guaranteed housing that won't break or warp means years of repair-free service. Adjusting nut in open housing spins easily to pipe size. Quick-action jaws won't lock on pipe — handy pipe scale on full-floating hookjaw. Strong comfort-grip I-beam handle. More for your money — and you enjoy using it. Buy it at your Supply House.



This compound-leverage RIGID has 14 times the power of ordinary pipe wrenches... pays for itself in salvaged fittings!

RIGID

WORK-SAVER PIPE TOOLS

THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.

When inquiring specify CP A1134 — see information request blank, pgs. 2-3

# JESSOP

**SOLID  
STAINLESS  
STEELS**

**STAINLESS-  
CLAD  
STEEL\***

• There are many applications where only a solid stainless metal will do the job and for these we recommend Jessop Solid Stainless Steels, of the required analysis to meet specific operating conditions. Where stainless protection is needed on one surface only, use Jessop Stainless-Clad Steel, which will give the performance of solid stainless on the clad side and at the same time save in material and fabrication cost. As producers of both solid stainless and stainless-clad steels we can give impartial advice regarding the type best suited for your purpose. Delivery to meet your requirements.

\*U. S. Patent Nos. 1,997,538 and 2,044,742

**JESSOP STEEL CO.**

HEAD OFFICE AND WORKS

WASHINGTON, PENNA.



Established 1901

When inquiring specify CP A1135 — see information request blank, pgs. 2-3

## PRODUCTION

### Insulating Fibre For Lockers

*Special asphalt impregnation adds to natural moisture resistant characteristics*



#### HAND PACKING INSULATION

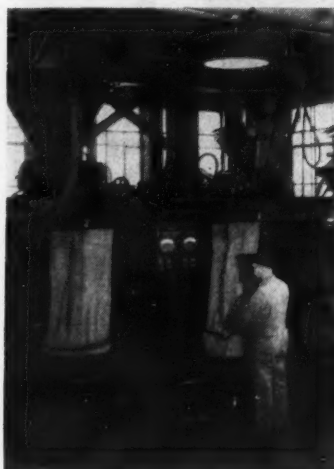
**Description** — This insulating fibre for locker and cold storage plants is a fill-type similar to the Balsam-Wool used in refrigeration and freezing industry. Known as Balsam-Wool K-25 it is shipped in bales. On the job fibre is fluffed to a low density and hand packed in walls, floors, ceilings.

WOOD CONVERSION CO., Dept. CP, First Nat'l. Bank Bldg., St. Paul, Minn.

When inquiring specify CP A1136 — see information request blank, pgs. 2-3

### Compact, Dustless Pulverizers For Rapid Dry or Wet Processing

*Particle size control advantageous in reaction, weight, volume; used for soaps, inks, gums, metals, glue, lime, pharmaceuticals*



PULVERIZERS discharge into drums

solubility, weight, color, volume, appearance, strength, etc. For example there are cases working to a specification such as a maximum percentage through a 40 mesh with a minimum amount minus 150 mesh. In various instances it is possible with these pulverizers to approach closely the particle sizing of the screened sample. This is so on grinds as coarse as 10 or 12 mesh. This accuracy of mesh control is achieved the entirely mechanical grinding action. Air stream is not used to convey material from grinding

**Uses** — For locker and cold storage plants.

**Features** — When packed in the wall, density is from three and a half to four pounds per foot — effecting a saving in material. The fibre will felt but still maintains a certain amount of resiliency, avoiding settling.

## SOUTH BEND



— FOR PRODUCTION OF SMALL, ACCURATE PARTS  
— FOR PRECISION OPERATIONS IN TOOLROOMS

The metal working industry knows the South Bend 9-inch Lathe as a fine precision tool capable of machining work to exacting tolerances. For the quantity production of small, accurate parts or for precision operations in the toolroom, experimental shop or laboratory, it is unsurpassed. Because it is fast, accurate and versatile it is popular, too, for general use in machine shops and service shops. Write for our new Catalog 100-D showing, describing this and other South Bend Toolroom, Engine and Turret Lathes.



**SOUTH BEND LATHE WORKS**  
Lathe Builders For 38 Years  
439 E. MADISON ST., SOUTH BEND 22, IND.

When inquiring specify CP A1137 — see information request blank, pgs. 2-3

### Now Also Available in NEW LIGHT DUTY STYLE

*All-Neoprene  
Latex*  
**INDUSTRIAL  
GLOVES**

Impermeable to practically  
All Acids and Caustics

Highly Resistant to Oils  
and Greases



#### 5 POPULAR STYLES

★ No. 5760-5, 18" LONG  
EXTRA LONG GAUNTLET  
GAUGE .030 TO .040  
SIZES 10, 11

★ No. 5737-2, 14" LONG  
LONG GAUNTLET  
GAUGE .030 TO .040  
SIZES 9-10-11-11½-12

★ No. 5705-5, 11" LONG  
SHORT GAUNTLET  
GAUGE .020 TO .025  
SIZES 9-10-11

★ No. 5703-5, 10½" LONG  
STANDARD DUTY  
GAUGE .015  
SIZES 7-8-9-10-11

★ No. 5702-5, 10½" LONG  
LIGHT DUTY  
GAUGE .010 TO .012  
SIZES 7-8-9-10-11

REQUEST  
SAMPLES  
AND  
PRICES

**SEIBERLING LATEX PRODUCTS CO.**

AKRON, OHIO

354 - 4th Ave., New York City

Merchandise Mart, Chicago

When inquiring specify CP A1138 — see information request blank, pgs. 2-3



## PRODUCTION

chamber not to obtain desired particle size. Once mill is set to deliver certain product it continues to produce same results. As most of these units operate without use of fans, cyclones, separators, etc., they are dustless and easy to clean. Construction is compact and design achieves savings in power. Simplified operation permits workers to quickly learn how to use them properly.

**Description** — Although these units have the same general appearance, each is built to meet the particular and peculiar requirements of each application. The "Mikro-Pulverizer" contains a minimum number of parts. It generally turns out finished products without oversize or tailings to be separated. The main body is a one piece casting, having rounded contours with corners and pockets eliminated. Cast sections have been properly proportioned to provide necessary strength and rigidity. Feed drive mechanisms have been replaced by independent fractional horsepower motor with either a roller chain drive or preferably a variable speed drive. (Wet milling pulverizers are basically the same as the dry "Mikro-Pulverizers"). Installation illustrated comprises two units. This equipment is in plant of dyestuff manufacturer. The mills are fed from large mixers, located on floor above and because of the packy nature of the material a special vertical agitator is used with each hopper. Discharge is direct to shipping drums. Control panel is centrally located. The entire system is easily accessible and quickly cleaned. Catalog includes comprehensive presentation of various processing applications. There are numerous pictures of actual installations. There are numerous views of the Bantam model pulverizer showing characteristic construction features including drop-forged steel, streamlined swing hammers, tipped with abrasion resistant alloy; feed screw, screens, cover clamp and clamp bar. An additional sectional view of a typical unit shows the course of the material through the mill from feed to finished product. Further information in connection with individual requirements on request.

PULVERIZING MACHINERY CO., Dept. CP, Summit, N. J.

When inquiring specify CP A1139 — see information request blank, pgs. 2-3

## Cluster Type Humidifiers For Large Area Service

*Easy to install; adaptable to use in air conditioning systems*



**HUMIDIFIER**  
Cluster type

80,000 to 640,000 cubic feet of inclosure. Operation is on pressures from 1-20 pounds.

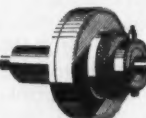
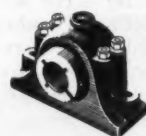
TECHTMANN INDUSTRIES, INC., Dept. CP, 280 No. Broadway, Milwaukee 2, Wis.

When inquiring specify CP A1140 — see information request blank, pgs. 2-3

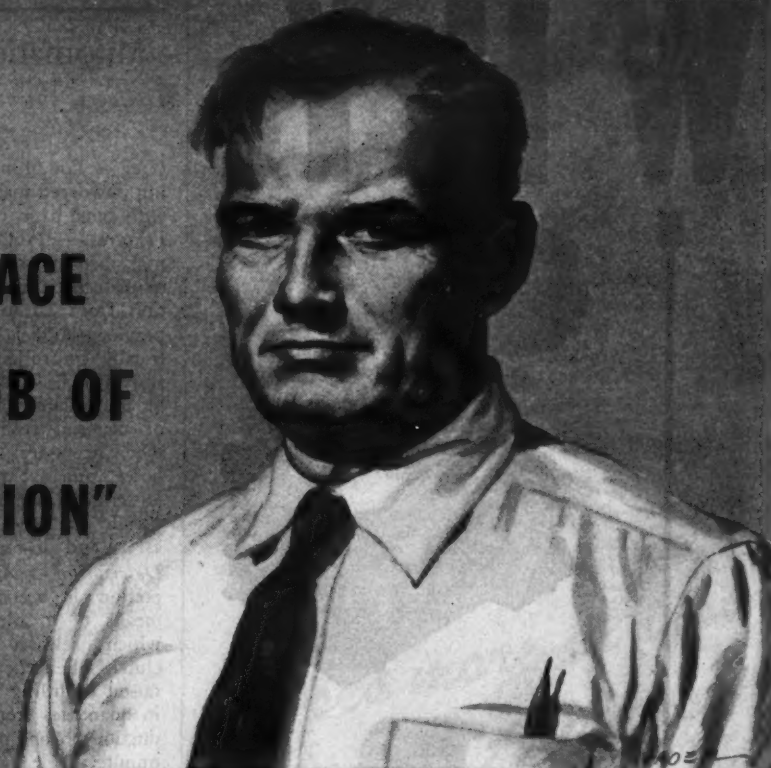
**Uses** — For humidifying large industrial areas including both plants and offices.

**Features** — Simple to install and adaptable to use in air conditioning systems.

**Description** — This recent cluster-type humidifier is a development of another model thoroughly tested in use in smaller areas. It is available in multiples from two to sixteen humidifiers with a capacity range of approximately 240 gallons to 1820 gallons per 24 hour period, serving areas



## TO THE MEN WHO FACE THE REAL JOB OF "RECONVERSION"



The whole world is talking about *your* job. They call it "reconversion."

The public thinks of it as a magic transition from war materials to glorious peace-time products.

But you know, and *we* know, that reconversion will not be accomplished by waving a wand. Whole production lines must be entirely revamped. And that calls for time and skill and sweat.

To every plant operating man facing this problem, Dodge offers practical and valuable assistance. The Dodge Transmissioneer can make your work easier. He can save you days and weeks of time. He can show you new and better ways of putting *all* your power into the job.

Dodge Transmissioneering is based on 63 years of engineering experience. It is supported by America's most complete line of power transmission equipment. In one form or another it

contributes to the mechanical flow of power in the vast majority of the nation's plants.

Dodge "know-how" and products together, insure power drive systems that are advanced in design, that put *all* the power in the job, and that ease the work of the men charged with their installation and maintenance.

There is a Dodge Transmissioneer near you. Put him to work. He can prescribe, and provide, the most efficient equipment for your reconversion needs.

**DODGE MANUFACTURING CORPORATION**  
MISHAWAKA • INDIANA

Copyright 1944 Dodge Mfg. Corporation



There are 210 Dodge factory graduate Transmissioneers, located in principal cities, to show you new and better ways of transmitting power.

Sign of the Dodge Transmissioneer

# DODGE

MISHAWAKA

THE R I G H T DRIVE FOR THE JOB

When inquiring specify CP A1141 . . . see information request blank, pgs. 2-3

# WHY



the Olivite Pump provides Low "per Gallon" Cost

**T**HE Olivite Pump is an acid-handling pump and has an excellent record of moving a great variety of chemicals, hot as well as cold, at exceptionally low "per gallon" cost. The pump is so well protected. The contact materials — OLIVITE, a rubber-base composition or OLIVEX, a tough, strong, resin plastic — are particularly durable and firmly bonded to the casing, cover and impeller. The floating stuffing box and the spring-tensioned gland get the best use out of the packing. The split gland facilitates packing renewals. The shaft is enclosed in a protective sleeve of selected material.

Being so well protected and so well constructed, the Olivite Pump is a durable pump and being durable and highly efficient, its "per gallon" cost is low. Sizes range from 1 1/4 to 4 inches. Details are given in Bulletin 308.

**OLIVER  
UNITED FILTERS  
INC.**



New York 18, N. Y.  
35 West 42nd Street

San Francisco 11  
California

Chicago 1, Ill.  
221 N. LaSalle Street  
Western Sales Division  
Oakland 1, Calif.  
2900 Glascock Street

Canada: Sales & Manufacturing Representative  
E. Long Limited — Orillia, Canada

Factories: Oakland, Calif.—Hazleton, Pa.—Orillia, Canada—Melbourne, Australia  
1-OUF-2

When inquiring specify CP A1142 — see information request blank, pgs. 2-3

## PRODUCTION

### Automatic Feeding Auger Packer

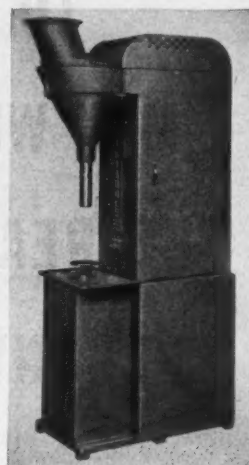
*Delivers powders in quantities 5 Oz.-5 Lbs., has electric emergency stop*

**Uses** — For filling and packing powdered materials. Used with cans, bags, cartons, jars. **Features** — Automatic feeding, instead of foot control of material, increases production from 10 to 25% over previous models. An electrically controlled emergency stop switch enables operator to immediately cut off feed of material from the auger when necessary. Packing bowl quickly removed by loosening three nuts. Completely enclosed design for safety and dust protection.

**Description** — Automatic operation is accomplished by means of a solenoid switch which releases the effect clutch when the container is raised to filling position. Handles all kinds of powders in quantities from several ounces up to five pounds. Production on one pound packages is 30 or more packages per minute.

TRIANGLE PACKAGE MACHINERY CO., Dept. CP, 906 Spaulding Ave., Chicago, Ill.

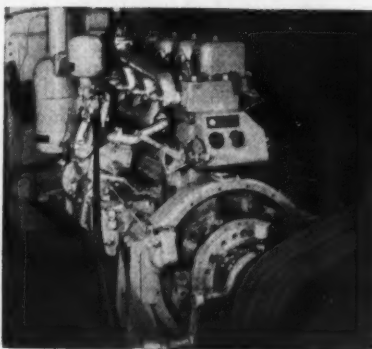
When inquiring specify CP A1143 — see information request blank, pgs. 2-3



PACKER . . packing bowl is instantly removable

### Diesel Engines Provide Savings In Processing Power Uses

*Low installation, operating costs; available for continuous service, immediately shut off when not needed; operate on low cost fuel*



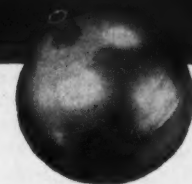
SIX CYLINDER DIESEL

**Features** — Economy in initial cost and operation through availability of units for exact power requirements. Installation quickly made and easily increased with additional units if required. Ready for continuous service or shut off when not required; also easily switched from one application to another such as from drive service to lighting needs. Pre-combustion chamber ignition system permits use of low grade fuel.

**Description** — Originally built to power track type trac-

**Uses** — For water and other pumping services; power for mills, crushers, sifters, refrigeration, mining and oil field operations. Wide range of fields served include: brick plants, creameries, dairies, breweries, flour, feed and fiber mills and other processing applications.

## STAINLESS STEEL FLOATS for severe service



The strength and corrosion resistance of stainless steel makes floats of this material particularly adapted to many services where ordinary floats would be short-lived. Stainless steel floats may be safely used at operating temperatures up to 800 deg. F. For more severe service, at temperatures up to 1600 deg. F., floats of stabilized 18-8 stainless steel, with Chicago Float Works stabilized weld, make the most of the exceptional corrosion resistance of this material. Spherical (ball) shape only, with standard connection fitting, or without connection. Standard sizes, 3 to 10 inch diameter.

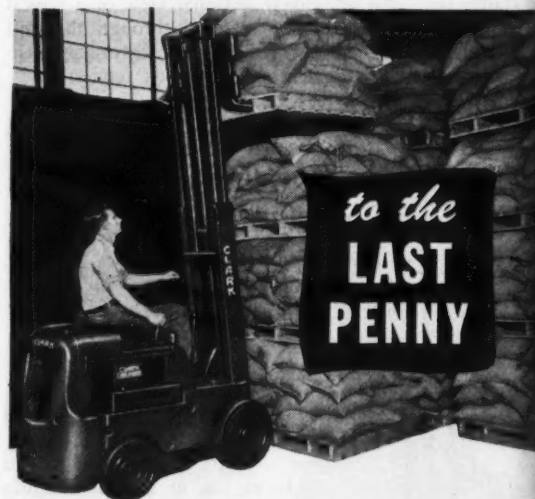
Get complete data on stainless steel floats, as well as all other types, in our general catalog, sent upon request.

### CHICAGO FLOAT WORKS, INC.

"Nothing but Floats" since 1915

2330 SOUTH WESTERN AVENUE, CHICAGO 8, ILLINOIS

When inquiring specify CP A1144 — see information request blank, pgs. 2-3



to the  
**LAST  
PENNY**

Make every square foot of space earn more — make every movement of material cost less

use **CLARK** fork trucks

**CLARK TRUCTRACKTOR**

BATTLE CREEK, MICHIGAN, U.S.A.

When inquiring specify CP A1145 — see information request blank, pgs. 2-3





## Put Speedaire into your Process Plant Picture for 1945

**PICTURE** the new Cleveland Speedaire Worm Gear Units on your equipment, and you picture new low costs for transmitting your power. Because Speed-

aire creates an entirely new standard of worm gear performance—and gives you more horsepower for your dollar. Make your conversion effective, by applying Speedaire on all of the equipment you purchase next year. Speedaire is as modern as the newest machine you will install—as trustworthy as everything Cleveland has built for you since 1912. We'll gladly send literature—or a District Representative.

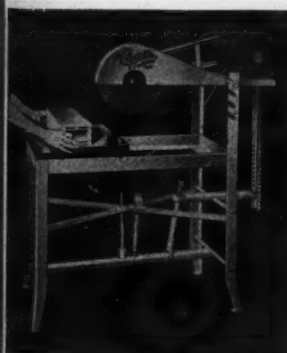
The Cleveland Worm & Gear Company,  
3257 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication

In Canada: PEACOCK BROTHERS LIMITED



When inquiring specify CP A1146 — see information request blank, pgs. 2-3



## Special Sizes and Shapes . .

..... of firebrick made accurately and quickly right on the job, assuring tighter joints and longer lasting walls and arches in furnaces, boilers and acid chambers.

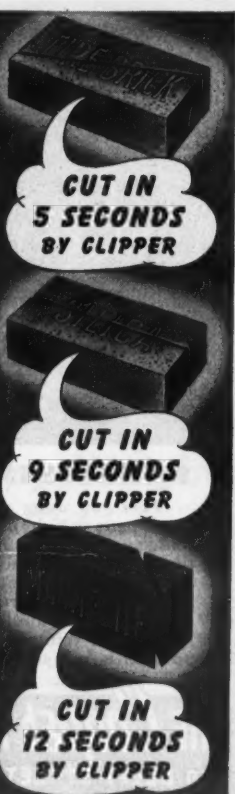
Low Cost cutting of all Refractories and Masonry Materials, regardless of hardness.

**Clipper Manufacturing  
Company**

4034 MANCHESTER AVE.  
ST. LOUIS 10, MISSOURI

**FREE TRIAL**

INFORMATION ON REQUEST



**CUT IN  
5 SECONDS  
BY CLIPPER**

**CUT IN  
9 SECONDS  
BY CLIPPER**

**CUT IN  
12 SECONDS  
BY CLIPPER**

When inquiring specify CP A1147 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

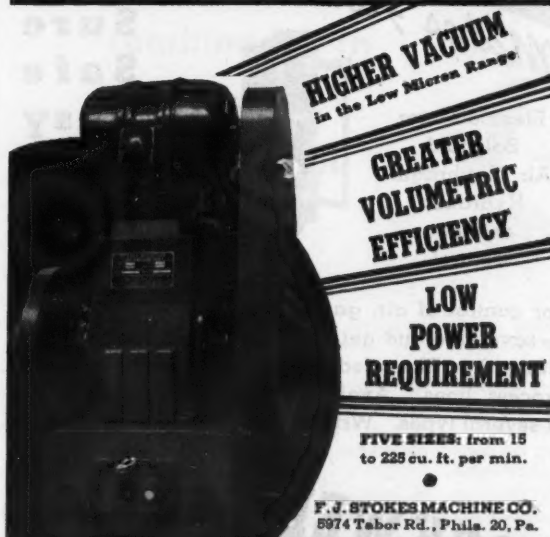
## PRODUCTION

tors, these "Caterpillar" diesels are now in use in many industries. The four stroke cycle design has always been adhered to in these engines, eliminating many critical conditions of load and speed and permitting building-in heavy duty features. The amount of fuel injected is limited intentionally to permit operation with a liberal margin of excess air at rated continuous power output. This excess air allows combustion to occur in extremely short periods of time thereby reducing the heat losses through the cylinder walls which in turn minimizes deterioration of the lubricating oil for lower upkeep and longer life. These engines employ ingenious seals at vital points to guard them against dust and dirt and have independent two-cylinder gasoline starting engines. (Electric starting systems are available where certain conditions demand it). An hour meter determines the time for periodic servicing. Models include 4, 6, and 8 cylinder types. Typical installations include (1) Six cylinder in fire brick plant powers crushers, sifters, etc. The plant handles about 12 tons of raw clay per day. (2) Roller mill with four cylinder model produces 50 barrels of flour per day (16 hrs.). (3) An interesting application is in a fiber mill making cigarette paper from flax straw. A six cylinder engine powers the mill which consumes 25 tons of raw straw each eight hours to produce four tons of paper fiber. Fuel consumption is only three gallons of 10c fuel per hour. Savings of approximately \$20 a day have resulted. Literature on request.

CATERPILLAR TRACTOR CO., Dept. CP, Peoria 8, Ill.

When inquiring specify CP A1148 — see information request blank, pgs. 2-3

## Stokes MICROVAC Pumps HEART OF HIGH VACUUM SYSTEMS



**HIGHER VACUUM**  
in the Low Micron Range

**GREATER  
VOLUMETRIC  
EFFICIENCY**

**LOW  
POWER  
REQUIREMENT**

**FIVE SIZES:** from 15  
to 225 cu. ft. per min.

F. J. STOKES MACHINE CO.  
5974 Tabor Rd., Phila. 20, Pa.

**Stokes High Vacuum  
PUMPS • GAUGES • EQUIPMENT**

When inquiring specify CP A1149 — see information request blank, pgs. 2-3

## X-PANDO SEALS THE JOINTS SAVES THE PIPE — Permanently

Because X-PANDO PIPE COMPOUND is the only compound that expands as it sets . . . because it comes in one formula for all uses—an absolute, all-purpose pipe compound that does magic even in unskilled hands—it is the standard compound in American Shipbuilding and Industry. Here is permanent leak-proof insurance—a compound that corrects imperfections in threads and smooths flange faces.

*Does more for less  
Cost . . . Always!*



Economical, goes 6 times further—holds anything carried in metal pipe except certain heavy acids—expands and contracts with pipe movement—joints easily taken apart—withstanding deflection, sharp temperature changes, vibration and pressures—better than litharge and glycerine for all uses. X-Pando is more than just a pipe joint compound. It is an all-purpose industrial sealing agent.

★  
Used by U. S. Navy, U. S. Maritime Commission, U. S. Coast Guard, U. S. Army, U. S. Army Air Corps. and thousands of Industrial Plants and Contractors.

**X-PANDO CORPORATION**  
43-15 36th STREET • LONG ISLAND CITY, N. Y. • Stillwell 4-7180

DISTRIBUTORS  
EVERYWHERE

When inquiring specify CP A1150 — see information request blank, pgs. 2-3

# D.O. James

ESTABLISHED 1888

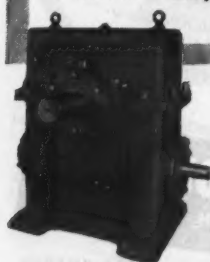


## WORM GEAR REDUCERS

### Designed and Built for the Successful "Doing of The Job"—

Due to their wide ratio range, the D. O. James Worm Gear Reducers are ideal for many power saving installations. They are designed and built by an organization that has had over a half century of Gear Making Experience and who have successfully pioneered the Gear Reducer to its present high efficiency standards. The many and repeated installations of D. O. James Worm Gear Speed Reducers testify to their superiority and adaptability. These reducers are the result of excellent craftsmanship in our engineering, cutting, grinding, assembling, inspection and testing departments. An experienced supervision and modern plant facilities assure a finished product that will be successful in "The Doing of The Job."

**D.O. JAMES MANUFACTURING CO.**  
1140 W. Monroe Street Chicago, Illinois  
Makers of Every Type of Gear and Gear Reducer



Type "H" Worm Gear Speed Reducer  
Horizontal (Illustrated) or Vertical  
Drive—26 Sizes, Ratio Range of 6 to  
65:1, and from 1/32 to 150 Horse-  
power.

When Inquiring specify CP A1151 — see information request blank, pgs. 2-3

## PRODUCTION

### Glass Tanks for Handling Acids, Alkalis and Chemicals

Withstand operating temperatures up to 650° F.;  
instantaneous thermal shock of 400° F.



ALL GLASS TANK for view of contents  
during processing

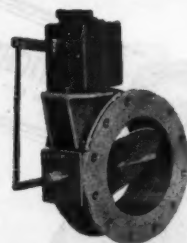
wire; and in handling liquids of almost every kind.

**Features** — In all the various types and styles offered the glass used for construction has four times the strength and six times the resistance to impact of regular plate glass of equal thickness. It can withstand operating temperatures up to 650 degrees F. and an instantaneous thermal shock of approximately 400 degrees F. These glass tanks are readily available and provide suitable replacements for

**Uses** — For handling alkalis and chemicals. Illustration on cover showing installation for cleaning precision parts is typical of various special applications. These glass tanks are also being used in acid cleaning and plating, pickling heavy

## Automatic Control Makes Flow and Shut-Off

Electric Motor  
Solenoid  
Air Diaphragm  
Hydraulic  
or Float  
Control



**Sure  
Safe  
Easy**

Pipe Sizes  
1" to 48"  
of Any  
Metal

For control of air, gases, steam, liquids and solids — save time and get positive shut-off with Rockwell Flanged or Threaded Automatic Butterfly Valves in process lines. Available also in manual control of several types. Write for Catalog 406.

## ROCKWELL VALVES

SLIDE and BUTTERFLY  
FOR AIR • GAS • LIQUIDS • SOLIDS

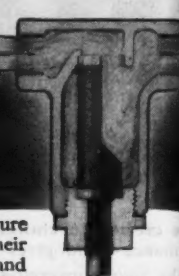
**W. S. ROCKWELL COMPANY** 56 Church Street  
New York 7, N. Y.

When Inquiring specify CP A1152 — see information request blank, pgs. 2-3

## "These Strainers Really Keep Things MOVING"



Type TW  
Liquid Strainer



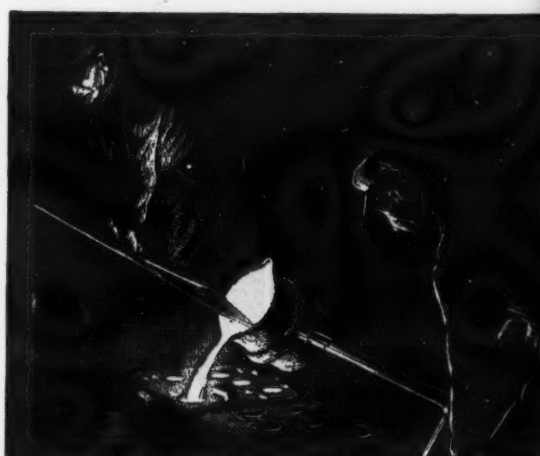
An important and money-saving feature of Spraying Systems strainers is their extremely large area through screen and body. Full line capacity is handled freely.

The Type TW, shown here, is supplied with cast iron body and Monel Metal screen which may be fine or coarse as required. All-brass or all-stainless construction is also available. Bottom blowout facilitates cleaning without removal from line.

It will pay you to have complete information on Spraying Systems strainers and other products such as spray nozzles and assemblies for almost every application. Write for free Catalog No. 22.

**SPRAYING SYSTEMS COMPANY**  
4037 West Lake Street Chicago 24, Illinois  
SPECIALISTS IN THE DESIGN AND  
MANUFACTURE OF SPRAY NOZZLES

When Inquiring specify CP A1153 — see information request blank, pgs. 2-3



## STAINLESS STEEL CASTINGS

Are you using stainless steel forgings or fabricated parts which might conceivably be cast—with consequent savings in cost, man-hours and delivery time? If so, the chances are we can help you.

Using either the static or centrifugal method—which ever is better for a particular job—we are able to produce many parts previously considered impossible to cast.

Write for complete information. Tell us what your problem is and give us a chance to help you solve it.

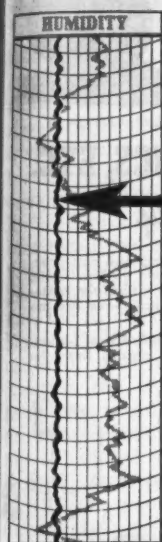
**THE Cooper ALLOY FOUNDRY CO.**  
150 BLOY STREET • HILLSIDE, NEW JERSEY

When Inquiring specify CP A1154 — see information request blank, pgs. 2-3



## MOISTURE ENGINEERING

with the KATHABAR System  
automatically and accurately provides



**THE  
PROPER  
HUMIDITY**

—Independently of temperature—

for processing operations in the  
manufacturing of:

DRUGS, PHARMACEUTICALS, CHEMICALS,  
FOODS, OR ANY PRODUCT OR MATERIAL  
AFFECTED BY EXCESS HUMIDITY  
CONDITIONS... Write for information.

SURFACE COMBUSTION • TOLEDO 1, OHIO

**SC Kathabar System of  
HUMIDITY CONTROL**  
(ADVANCED AIR CONDITIONING)

When Inquiring specify CP A1155 — see information request blank, pgs. 2-3

## PRODUCTION

tank materials more difficult to secure. The glass tanks are thoroughly sanitary and easily cleaned.

**Description** — All the glass used for construction of these tanks, whether "Carrara" structural glass or transparent plate glass is especially "tempered" or "Herculited" by special process to give it great strength and resistance to thermal shock. The standard glass tanks are free standing units manufactured complete in the plants. They have "Carrara" structural glass facing or lining on the inside surfaces of the tank. Outer construction is of wood protected by coatings of acid-resistant pitch; available in either rectangular or in vertical styles. In the case of rectangular tanks furnished in standard sizes, each inside face of the tank is composed of a single plate of glass without joints. All glass tanks have inside facing of structural glass and outer surfaces also faced with glass. Transparent tanks are made of polished plate glass and are recommended only for certain processes under certain conditions. In the tanks mentioned and also in case of glass linings installed in present equipment metal tie rods are used to assure tight construction. Joints will always remain tight because of a continuous chemical proof membrane behind the glass and because of a secondary glass seal which is applied directly against the outer wood shell. The tank illustrated is all glass made of tempered polished plate  $\frac{3}{4}$  inch thick and with no material other than glass touching contents (jointing grooves filled with impregnated glass cloth gaskets; tie rods of non-corrosive metal.) Detailed information regarding tanks for individual requirements on request. PITTSBURGH PLATE GLASS CO., Dept. CP, 632 Dusquegne Way, Pittsburgh 22, Pa.

When Inquiring specify CP A1157 — see information request blank, pgs. 2-3



### Effective Help for Office Work

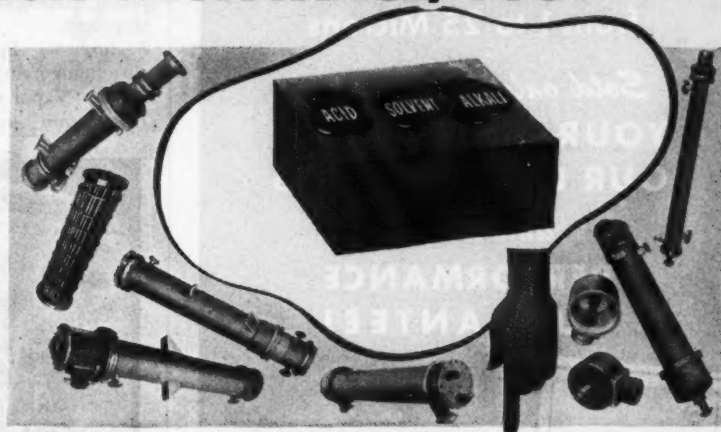
**DESIGNED** for high quality fluorescent lighting at lower cost, the BEACON is a "honey" for lighting essential offices or drafting rooms. Provides smooth, shadowless light to help handle paper work faster and reduce eyestrain. Maintenance is especially easy, with no horizontal surfaces on which dust can collect. New rigid design louvers hinged to make lamp replacement simple. Ask your Graybar house for details or write us.

**Wakefield**

THE F. W. WAKEFIELD BRASS COMPANY • VERMILION, OHIO  
When Inquiring specify CP A1158 — see information request blank, pgs. 2-3

## What! CORROSION RESISTANCE, TOO?

**Right! Uniquely  
combined with  
many other  
highly useful  
properties!**



WHERE UTMOST RESISTANCE to the action of strong chemicals is required, "National" carbon and graphite and "Karbate" products excel. This means for heaters and heat exchangers. For pipe, tubes, fittings, pumps, valves. For tanks, tank linings and furnace linings. For flooring and porous products. For innumerable other applications.

In many of these, "Karbate" material is used. "Karbate" equipment, in addition to

being impervious to seepage of fluids under pressure, has adjustable properties, according to whether carbon or graphite is the base. Specifically, the properties of carbon, graphite or "Karbate" products can be prescribed.

"National" carbon, graphite, and "Karbate" specialty products and structural shapes today solve industrial problems because no other material matches their *uniquely combined* physical, chemical, and electrical properties.

### NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation

General Offices: 30 East 42nd Street, New York 17, N. Y.

Division Sales Offices: Atlanta, Chicago, Dallas, Kansas City, New York, Pittsburgh, San Francisco

The registered trade-marks "National" and "Karbate" distinguish products of National Carbon Company, Inc.

When Inquiring specify CP A1159 . . . see information request blank, pgs. 2-3

## For Accurate, Continuous Flow Feeding by Weight

**SYNTRON**

"Weigh-Flow"

## WEIGHING FEEDERS

will give you accurate control in the feeding of bulk materials in Blending and Continuous Mixing Processes, Drying, Grinding, Pulverizing, etc.

Write us about your problem

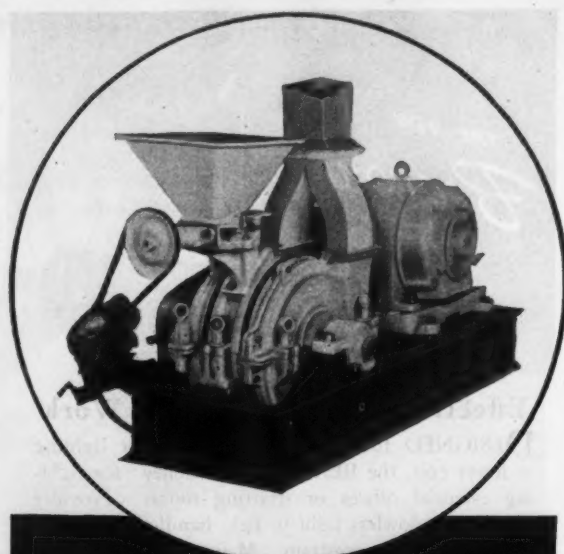
**SYNTRON COMPANY**

110 Lexington

Homer City, Pa.

When Inquiring specify CP A1156 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945



*New —  
the amazing*  
**MIKRO-ATOMIZER**

a mechanical, screenless  
pulverizer for production  
of ultra-fine powders  
from 1 to 25 Microns

*Sold only after test of*  
**YOUR MATERIALS in**  
**OUR LABORATORIES**  
*and with a*  
**PERFORMANCE**  
**GUARANTEE!**



Send for the new  
MIKRO-ATOMIZER  
ADVANCE BULLETIN  
**PULVERIZING MACHINERY**  
**COMPANY**  
60 Chatham Road, Summit, N. J.

**MIKRO-PULVERIZER**  
**ATOMIZER**

When inquiring specify CP A1190 — see information request blank, pgs. 2-3

**PRODUCTION**

**Plant Broadcasting Reproducer**

*For wide angle coverage of medium and low noise  
level areas; 6 inch speaker*

*Uses —* For plant broadcasting and is recommended for wide angle coverage of medium and low noise level areas.  
*Description —* The baffle type reproducer unit used provides duo-directional high fidelity reproduction for plant broadcasting. This model HF 6 speaker delivers 4 to 6 watts of output power. Use of several such units, properly spaced in large production areas, solves the problem of even sound distribution. A four step volume control, with cut-off switch, provides for individual adjustment at each unit. Six inch permanent magnet speaker with a 6 ohm voice coil enclosed in new type acoustical baffle. Suitable for wall or desk use, this hand rubbed walnut cabinet is 9 inches wide, 10½ inches high and 6½ inches deep.

EXECUTONE CORP., Dept. CP, 415 Lexington Ave., New York 17, N. Y.

When inquiring specify CP A1161 — see information request blank, pgs. 2-3

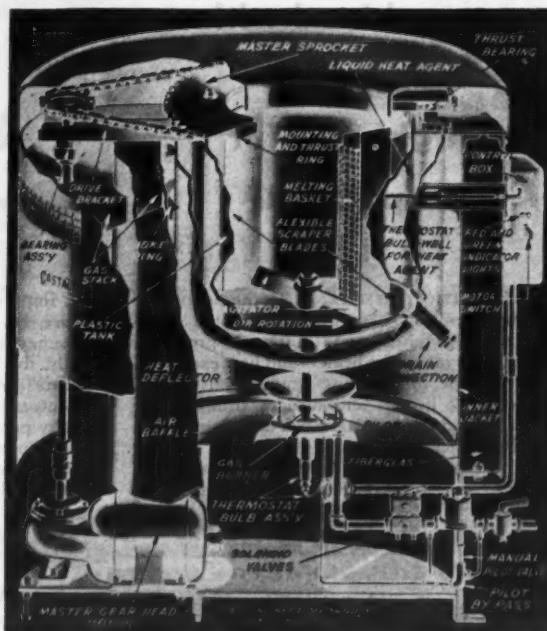
**Heating Tanks For Controlled  
Plastic Dip Packaging**

*Designed about direct, indirect; gas or electric;  
for melting, compounding, blending plastics  
and chemical formulations*

*Uses —* Melting, blending, compounding of plastics and chemical formulations — very well adapted to hot dip plastic packaging such as used for protection of parts in shipment.

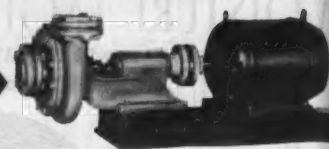
*Features —* System provides quick, uniform heat with close temperature control. No pumps required to circulate vapor. Vapor system hermetically sealed.

*Description —* Processing tanks and kettles, designed



ROUND TYPE HOT DIP MODEL

*These  
Pumps*



LaBour Type Q

**HANDLE ACIDS, CAUSTICS, ETC.**

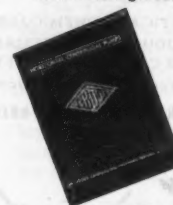
*More Efficiently*

LaBour Centrifugal Pumps, both the self-priming and non-priming types, move chemicals at lower costs per gallon. Using open impellers and generous clearances, they still make better use of power than many pumps whose original close fits are soon lost in service.

Bulletin No. 50 tells why so many cost-wise users of LaBour Chemical Pumps order them over and over again. Send for your free copy today.

**THE LABOUR COMPANY, INC.**

1571 Sterling Ave. • Elkhart, Indiana U.S.A.



LaBour Type DPL

**LABOUR PUMPS**

When inquiring specify CP A1162 — see information request blank, pgs. 2-3

*Easy  
to  
Operate*  
*Yes-Sparkler*  
*production filters*

are built for practical operation — one complete, portable, air-tight unit that can be quickly and easily dis-assembled for cleaning and replacing filter aids of any kind.

Sparkler Filters purify or clarify any fluid of suspended matter in any quantity, using any filter aid that produces the finest results at greatest speed.

Write for Catalog  
for your specific  
product.

**SPARKLER**  
**MFG. COMPANY**  
MUNDELEIN, ILLINOIS  
242 Lake Street



**SPARKLER**  
**HORIZONTAL PLATE**  
**FILTERS**

When inquiring specify CP A1163 — see information request blank, pgs. 2-3



## PRODUCTION

about two basic principles of direct and indirect heating methods, with a choice of gas or electricity as the heating medium are available for plastic packaging and equipment also incorporating this system is offered for chemical, synthetic rubber, paint and other industries. The indirect heating method is accomplished by enclosing the plastic container within a larger vessel which contains Dowtherm E. The two tanks form an integral, welded, leakproof, hermetically sealed construction. Dowtherm E boils at 350° F. and at 390° F. the vapor pressure is approximately 101 lbs. (24.6 lbs. absolute). By controlling the vapor pressure, the temperature range is maintained within very close limits. Direct heated equipment is precision controlled by means of thermostats mounted on each electric heater to maintain the sheath temperature within predetermined range plus or minus 10 degrees F. This method provides the correct combination of ambient and sheath temperature that is required to maintain the tank wall at the maximum safe temperature. A thermostat bulb is located within a special wall, mounted within the bottom of the tank, where the correct batch temperature is constantly controlled. A green light comes on when the batch reaches dipping temperature, red indicates below dipping point. Complete details on request of round and rectangular types in indirect, direct, electric or gas heated.

CATALOY METAL SALES CO., Dept. CP, 197 S. Waterman Ave., Detroit 17, Mich.

When inquiring specify CP A1164 — see information request blank, pgs. 2-3

## Combination Crane Truck for 4-Way Service — 6000 Pound Capacity

*Performs as lift, carrier, crane and tractor; full  
load speed 5 mph under normal conditions*



CRANE TRUCK

**Uses** — This combination unit combines four-way service: as a lift truck, a load carrier, crane and tractor.

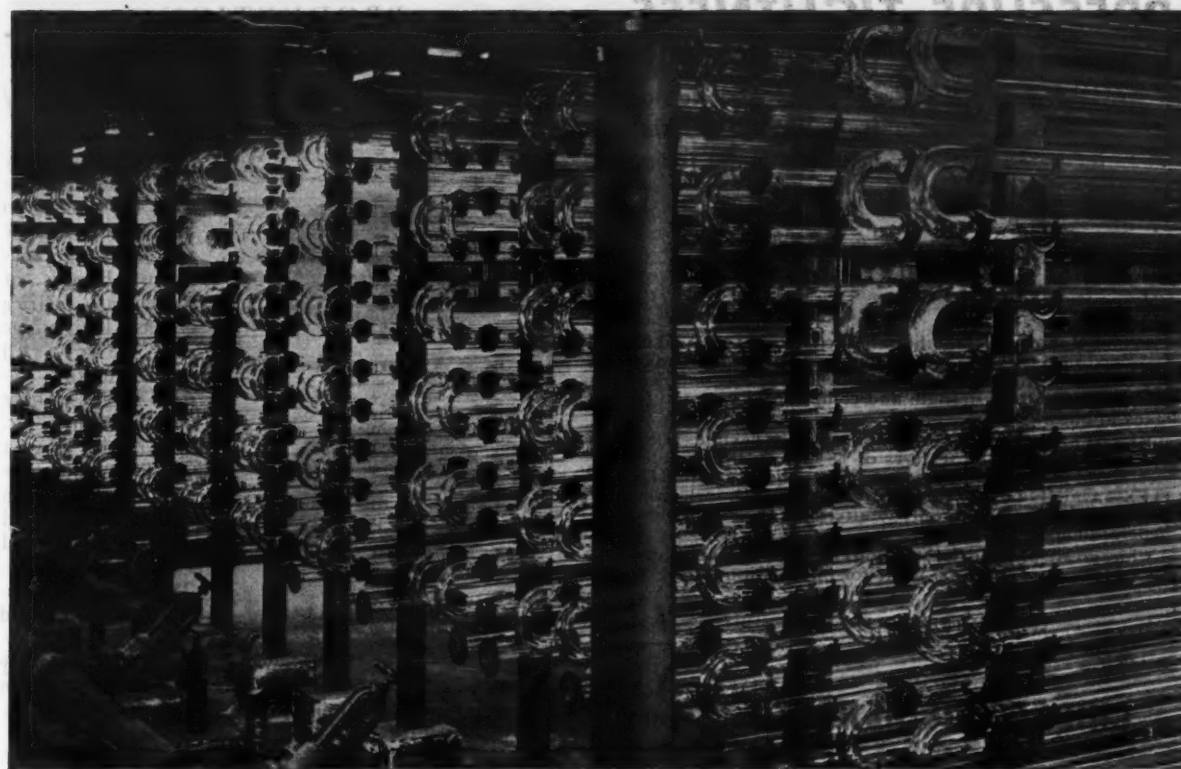
**Features** — It loads itself, either by picking up skid loads with the lift platform, or by lifting heavy parts and placing them on the platform

for transport. As a tractor it pulls trailer cars, which may be loaded by means of the crane. The crane may be made available for heavy lifting at points where there are no overhead cranes. Separate motors for boom and hook.

**Description** — This model has a capacity of 6000 pounds on the platform, 2000 pounds on the hook at 42 inch radius and 1000 pounds on the hook at 84 inch radius. It will travel at 6 miles per hour at no load and 5 miles per hour with full load under normal conditions. The platform is deeply flanged to insure rigidity and has three positive supports that assures load stability at all times.

ELWELL-PARKER ELECTRIC CO., Dept. CP, 4205 St. Clair Ave., Cleveland 14, Ohio.

When inquiring specify CP A1165 — see information request blank, pgs. 2-3



# 23 miles of Pyrex piping IN A SINGLE INSTALLATION!

Over 23 miles of PYREX Brand Glass Piping are used in these cascade type heat exchangers installed at Basic Magnesium, Inc., Las Vegas, Nevada. Like many others, Basic Magnesium Engineers have learned that PYREX piping is a truly practical plant material—that it will stand up under the most severe operating conditions. Here is what they say:

"In the Reduction Works Recovery operation, we use 6,240 ft. of 2" PYREX Piping on each acid cooler. We have 20 of these units, or a total of around 125,000 feet of this piping in service under full operation . . . We consider this service to be excellent under our operating conditions as replacements only amount to .008 of 1% . . . OUR FIRST UNIT WENT INTO OPERATION ON OCTOBER 24, 1942, AND HAS BEEN IN CONTINUOUS SERVICE SINCE."

"PYREX" is a registered trade-mark and indicates manufacture by Corning Glass Works, Corning, New York.

Whenever you have a difficult piping problem, where corrosive conditions exist, where thermal and mechanical shock are factors, where transparency is an asset, where low cost and low maintenance are important, consider carefully the advantages of PYREX piping. Corning Engineers are at your service on any piping problems. Write: Industrial Sales Dept., CP1, Corning Glass Works, Corning, New York.

Corning Glass Works, Industrial Sales Dept., CP1

Corning, New York

Please send me a copy of your Bulletin 814 on PYREX Piping.

Name.....

Firm.....

Street.....

City and State.....

**CORNING**  
Glass Works  
Corning, New York

**Pyrex Industrial Glass**

When inquiring specify CP A1166 . . . see information request blank, pgs. 2-3

## PRESSURE TIGHTNESS



There is no seepage of gases and liquids from REX-FLEX Stainless Steel Metal Tubing



Pressure tightness is another characteristic of REX-FLEX Stainless Steel Flexible Metal Tubing. Fittings and flanges are circular seam-welded to provide leakproof, uni-metal assemblies with the strength and compactness essential for many applications.

REX-FLEX is lightweight and extremely flexible. It has the corrosion-resisting features of 18-8 Austenitic stainless steel—and "18-8" temperature characteristics, as well. REX-FLEX—available in sizes from 1 to 6 inches I.D. inclusive—has proved its value not only in aircraft manufacture but in general industry as well.

Chicago Metal Hose Corporation engineers will help adapt REX-FLEX to your needs. Write for information today.

Flexible Metal Hose for Every Industrial Use

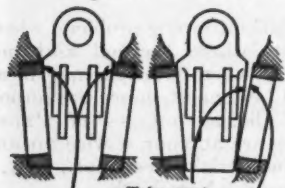
**CHICAGO METAL HOSE CORPORATION**  
MAYWOOD, ILLINOIS

Plants: Maywood and Elgin, Ill.

When inquiring specify CP A1167 — see information request blank, pgs. 2-3

## "Body Blows"

### THAT KNOCK OUT VALVES

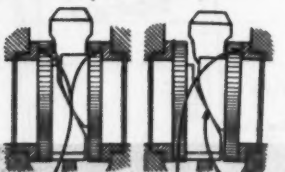


Wedge faces line up with seats when new. Wedge cannot fit against out-of-line seat. Seat forced out of line by body distortion.

ABOVE—What happens when a taper seat gate valve body is distorted is shown in these exaggerated diagrams.

**BEFORE AND AFTER**

BELOW—How the Darling Fully Revolving Double Disc Parallel Seat gate valve gives positive closing despite body distortion.



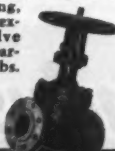
Discs parallel with seats when valve is new. Seat on right distorted but disc adapts itself to give positive closing. Curved face of wedge allows disc to adjust against both seats.

Distortion of valve bodies is a continuous and almost microscopic process, but is one of the chief causes of leaking valves. Under the body blows of high temperature and pressure valve bodies change shape and valve seats move out of their original line-up, preventing tight closing.

Over forty years ago Darling designed a valve that could take these body blows and still give positive closure. In the Darling Fully Revolving Double Disc Parallel Seat valve, there are two important features:

1. Floating discs are free to adapt themselves to change in valve body shape and position of valve seats.
2. Discs are fully revolving, seating in a different position each time, thus wearing evenly and always presenting a uniform surface against the valve seat.

Darling is the only valve with this simple, efficient design. For "positive closing, year after year," experienced valve buyers specify Darling for tough jobs.



**DARLING VALVE & MANUFACTURING CO.**  
WILLIAMSPORT, PA.

When inquiring specify CP A1168 — see information request blank, pgs. 2-3

## PRODUCTION

### Six Ounce Molded Fibre Helmet

Protect workers from objects in movement overhead and in low bridge areas



CAP adjustable to head size

**Description** — The caps, known as "Beanies," weigh only six ounces. Illustration shows smooth, streamlined design and arrangement of lining and hammock. Complete details from the manufacturer are available on request. PORTABLE PRODUCTS CORP., Dept. CP, 420 Blvd. of the Allies, Pittsburgh, Pa.

When inquiring specify CP A1169 — see information request blank, pgs. 2-3

**Uses** — These safety caps are suited for wear by workers in a very wide range of activities. Protects against hazards of conveyors, falling objects, low bridge areas, enclosed spaces, making repairs and assemblies under machines, etc.

**Features** — Light weight, molded fibre construction with soft, flexible band which fits any head shape comfortably. The lining and hammock are arranged to cushion any blow.

## Here's INFRA-RED at its best!



INFRA-RED RADIATION COMBINED AND CONTROLLED  
PLUS AIR CIRCULATION

An accurately engineered combination of radiation with air circulation that positively controls ambient oven temperature, air makeup and exhaust volumes, is setting new standards in infra-red heating efficiency and performance. Inquire about this new method of applying Infra-Red — Plus! Bulletin 10 sent on request.



**J. O. ROSS**  
ENGINEERING CORPORATION

350 Madison Ave., New York 17, N. Y.

CHICAGO-6  
201 N. Wells St.

DETROIT-3  
12953 Greeley Ave.

BOSTON  
79 MIT

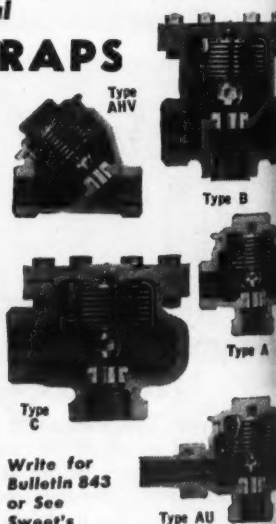
When inquiring specify CP A1171 — see information request blank, pgs. 2-3

## NICHOLSON

Industrial

### STEAM TRAPS

discharge air  
and wet steam  
as efficiently as  
water... with  
quick positive  
action



**Better Circulation  
of Steam — Rapid  
Transfer of Heat**

This is only one of the features that make Nicholson Industrial Steam Traps lead in their field. Consider these other advantages:

- NO FREEZE-UPS — Drain completely when cold, hence cannot freeze.
- NO ADJUSTMENT — Same size valve and seat for any pressure from vacuum up to the maximum allowable with construction used.
- NO DRIBBLING — Closes immediately when steam contacts bellows.
- NO WATER-LOGGED UNITS — Requires but a few degrees temperature differential to open valve.

**W. H. NICHOLSON & CO.**  
181 OREGON ST., WILKES-BARRE, PA.

When inquiring specify CP A1172 — see information request blank, pgs. 2-3



## HEAT LIQUIDS EASILY, ECONOMICALLY WITH G-E IMMERSION HEATERS



(One of the popular G-E midget heaters)

Use them to heat water, oil, and some mild chemical solutions. Put them into dipping tanks, cleaning baths, oil jackets, steam generators, tempering baths, and scores of other liquid containers. These electric heaters are efficient and long-lasting. Available in a wide variety of sizes, shapes, and sheath materials. Ratings up to 10,000 watts, lengths up to 46 inches. Economical to operate. **PRICES FROM \$8.70.**

### SEND FOR GED-650

This catalog will give you the complete story on immersion heaters and other G-E midget heaters; also information to help you select quickly the heater best suited to your needs. *General Electric, Schenectady 5, N. Y.*

\*OTHER G-E HEATERS: STRIP HEATERS, CARTRIDGE HEATERS, CALROD HEATERS, FIN CALROD HEATERS, HEATING CABLE, CONVECTION HEATERS

**GENERAL ELECTRIC**

When inquiring specify CP A1178 — see information request blank, pgs. 2-3

## Something New IN Dust Control



Here's the new Pangborn "CK" Industrial Type Unit Dust Collector. Developed through extensive research, it is our answer to the need for complete dust control on a specific job by means of a single unit possessing unusual capacity.

Fully described in Bulletin #910. Write for your copy today!

**PANGBORN**

WORLD'S LARGEST MANUFACTURERS OF DUST CLEANING AND DUST COLLECTING EQUIPMENT  
**PANGBORN CORPORATION • HAGERSTOWN, MD.**

When inquiring specify CP A1174 — see information request blank, pgs. 2-3

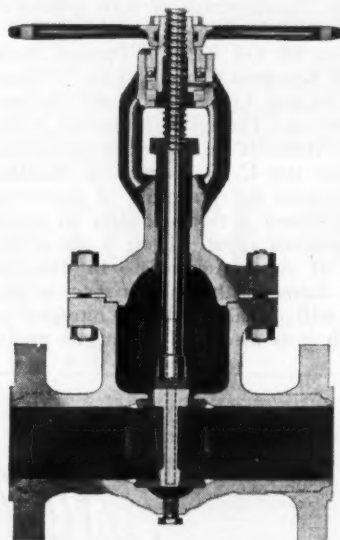
## PRODUCTION

### Gate Valve Design Eliminates Wear Across Seating Faces

*Fixtures permit hydrostatic test of both seating faces at once*

**Uses** — This extensive line offers classes and sizes to meet practically any gate valve requirement.

**Features** — To achieve perfect alignment of all working parts, close fitting wedge guide ribs are constructed by a new method which eliminates unnecessary and wear producing drag across seating faces.



CAST STEEL GATE VALVE

**Description** — Seat rings if these gate valves are hard surfaced and welded integrally to the body. Specially built fixtures permit hydrostatic test of both seating faces simultaneously, in contrast with the customary procedure of testing one face at a time. Gate valves 4 inches and larger are ball bearing equipped. In smaller sizes bearing plates are given a plating process to reduce operating effort.

EDWARD VALVE & MFG. CO. INC.,  
Dept. CP, East Chicago, Ind.

When inquiring specify CP A1175  
— see information request blank, pgs. 2-3

### Chemical Porcelain

Four page bulletin line of chemical porcelain including kettles, process pots, valves, piping, vacuum filters and raschig rings. Specifications are completely tabulated and diagrams and photos emphasize construction features. Copies on request.

LAPP INSULATOR CO. (Chemical Porcelain Div.), Dept. CP, Le Roy, N. Y.

When inquiring specify CP A1176  
— see information request blank, pgs. 2-3

## GOODALL

# Synflow LINING

## For Protecting Metal From Action of Chemicals, Oils, Solvents, Gases, Hot Caustics and Other Products



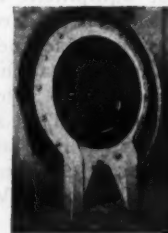
24" Multivane Fan Exhauster and Rotor, protected with "Synflow."

"Synflow" is a synthetic rubber compound used successfully to protect the inner or outer surfaces of virtually all types of equipment from the deteriorating effects of acids, chemicals, gases, oils, solvents, concentrated hot caustics, etc. It is equal, and in many cases, superior to rubber, and costs less.

### COMPLICATED SHAPES ARE NO PROBLEM

The method used to apply "Synflow" permits the lining of intricate or odd-shaped surfaces, large or small, quickly and at comparatively low cost.

**RIGHT:** Planing Mill Exhauster protectively lined with "Synflow."

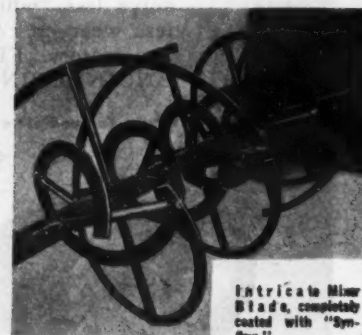


### COSTS LESS THAN RUBBER . .

"Synflow" provides a perfectly bonded, uniform coating on mixers, exhausters, spreaders, tanks, pumps, pipe, valves, etc., and saves up to 25% over the cost of rubber having comparable protective properties. Its long life assures additional savings in maintenance costs.

### QUICKLY APPLIED . . .

"Synflow" is applied in liquid or plastic form in a series of film-like layers of sufficient number to provide the specified density. The work can be done promptly, in our shop or by our mobile unit in your plant.



Intricate Mixer Blade, completely coated with "Synflow."

Contact our Nearest Branch or Main Office for Details

**GOODALL**



Main Office — 15 S. 36th St., Philadelphia 4, Pa.

THE GOODALL-WHITEHEAD COMPANIES

NEW YORK • PITTSBURGH • CHICAGO • BOSTON

GOODALL RUBBER CO. OF CALIF.

GOODALL RUBBER CO. OF TEXAS

Factory — Trenton, New Jersey Established 1870. 75 Years of "Know How" — Our Most Valuable Commodity

When inquiring specify CP A1177 — see information request blank, pgs. 2-3

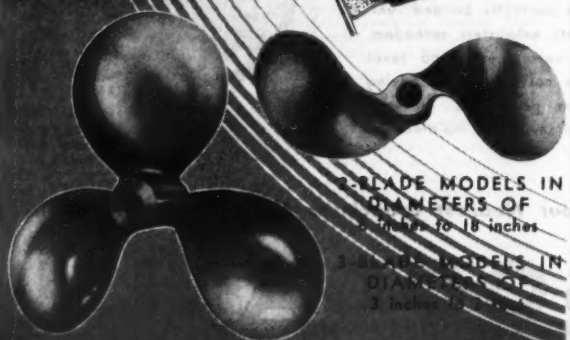
*Smooth*  
**VIBRATIONLESS**

**MICHIGAN**  
*MACHINED-PITCH*  
**PROPELLERS**

*for* **MIXING or AGITATION**

Available in a wide range of sizes, models and metals to ideally suit practically every requirement . . . whether for original equipment replacement or special application. Made by our exclusive "Machined-Pitch" method which means that they are absolutely accurate as to pitch, balance and blade spacing. This assures less "whip" on the shaft and less wear on connecting couplings and motors. **FREE CONSULTIVE ENGINEERING SERVICE.**

Write for complete details and prices NOW!



**MICHIGAN WHEEL CO.**  
232 Market Ave., S. W., Grand Rapids 3, Mich.

When inquiring specify CP A1178 — see information request blank, pgs. 2-3

## PRODUCTION

### Refrigeration With Ammonia — Properties of Anhydrous and Aqua Ammonia

A comprehensive bulletin entitled "Refrigeration With Ammonia" has recently been issued in a revised edition. This pertinent refrigeration information has been carefully compiled and presented so as to serve several purposes: (1) For the experienced engineer, data covering ammonia and its shipping containers; (2) For the guidance of relatively inexperienced workers in engine room, a brief outline of fundamentals of both compression and adsorption refrigeration; (3) As an operating aid in keeping ammonia charge clean, a description of appurtenances such as oil traps, accumulators and foul gas purgers and their proper operation. In the first section of the bulletin dealing with mechanical equipment detailed drawings of representative compression and adsorption systems facilitate following the sequence of the various steps in both systems as they are explained. Fundamentals of both systems are discussed and there are brief sections on such subjects as "Purpose and Location of Oil Trap," "Pressure Relief Valves," "Location of Ammonia Charging Line," "Expansion Coil Drain," "Suction Line Screens and Accumulators," "Piping, Valves and Fittings." Properties of both Anhydrous and Aqua Ammonia are covered in considerable detail. A chart from the U. S. Bureau of Standards Bulletin No. 142 tabulates the properties of Anhydrous Ammonia. Also reproduced is tabulated data on physiological response to ammonia vapor. There is also a tabulation on properties of Aqua Ammonia. In discussing purity of Anhydrous Ammonia the bulletin states in part: "Synthetic ammonia will contain traces of nitrogen and hydrogen from which it is made. The maker's product



*Now Ready!*

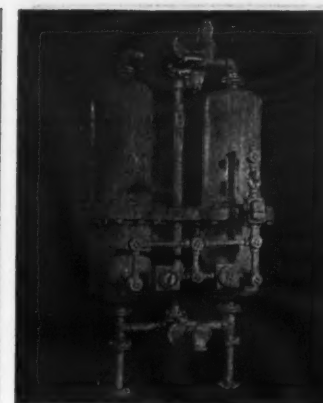
Catalog A-145, just off the press, covers an entire range of Centrifugal Pumps especially engineered for industry. Cross-section illustrations, performance curves and structural details show at a glance why users of Economy Pumps save in cost, power, labor. A copy of the Catalog is yours for the asking, on your letterhead.

- NEW FEATURES OF DESIGN
- NEW PERFORMANCE ACHIEVEMENTS
- NEW SIZES AND CAPACITIES
- NEW APPLICATIONS

SEND  
FOR YOUR  
COPY  
TODAY!

**ECONOMY PUMPS, INC.**  
HAMILTON, OHIO • U. S. A.

When inquiring specify CP A1179 — see information request blank, pgs. 2-3



### COMPRESSED AIR DRIED TO BELOW ZERO DEWPOINTS

- For instrument lines
- For process work
- For inspection and assembly departments



Kemp Adsorptive Dryers are the standard in modern industrial applications.

For Bulletin T25C write The C. M. Kemp Mfg. Co. 405 East Oliver Street, Baltimore 2, Maryland.

**KEMP of BALTIMORE**

When inquiring specify CP A1180 — see information request blank, pgs. 2-3

### Every Part Replaceable!

#### PULMOSAN M-500 DUST RESPIRATOR

Approval B.M. 2150 for Pneumoconiosis-producing and Nuisance Dusts.



#### Low-cost Maintenance

All parts in the M-500 Dust Respirator are replaceable — easily dis-assembled and re-assembled. Inexpensive replacement of worn or broken parts keeps it in top condition and continuous service. Filter unit easily cleaned by light tapping or occasional blast of compressed air. Metal and rubber parts are unharmed by hot water or disinfectants—do not break when dropped or striking hard objects, as with plastic. If bent, can be easily pressed back to shape. For efficient protection and low-cost service, use the M-500 Dust Respirator. Get details and prices.



#### FACE FIT FEATURE

Aluminum body may be bent inward or outward, as shown to provide airtight face fit on any facial contour. Small, medium and large rubber face cushions available for most efficient, comfortable fit.



When inquiring specify CP A1181 — see information request blank, pgs. 2-3



## PRODUCTION

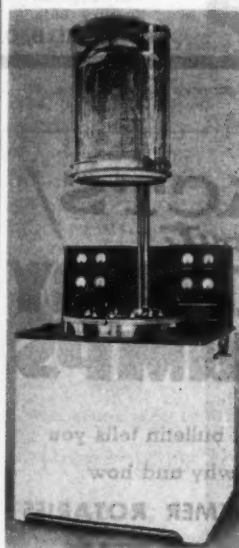
meets U. S. Army and Navy specifications. Guaranteed purity is: Non-condensable gas: gas drawn from top of cylinder on first opening will contain less than 20 cc of non-condensable gas per 100 grams of ammonia; residue: after free evaporation of 100 cc sample of liquid ammonia, residue will be less than 0.01%. One ton of anhydrous ammonia will contain less than  $\frac{1}{3}$  cubic foot of non-condensable gas and a scant cup full of water and oil. The two types of cylinders in which anhydrous ammonia may be shipped under regulations of Interstate Commerce Commission are illustrated and described. Data on Aqua Ammonia approved containers is also given. The final section of the book deals with charging procedures employed in the two systems. Copies of Bulletin on request.

PENNSYLVANIA SALT MFG. CO., Dept. CP, 1860 Broadway, New York 23, N. Y.

When inquiring specify CP A1182 — see information request blank, pgs. 2-3

### Vacuum Coating Unit For Deposition of Low Reflection Films

*Applications also include production of thin, uniform and controlled coatings of different salts and metals*



PNEUMATIC LIFT eases operation of bell jar

**Uses** — For deposition of low reflection films, manufacture of front surface mirrors, metallizing of piezo crystals and plastics, and the production of thin, uniform, and controlled coatings of different salts and metals.

**Features** — High vacuum valve enables diffusion to operate continuously. New simplified direct reading ionization gauge, a pneumatic lift for the bell jar.

**Performance** — Maker reports that evaporating pressures can be obtained in as little as one and one half minutes, depending on the type of mechanical pump selected, with complete evaporation effected in eight minutes. The DPI diffusion pump yields pressures of  $2 \times 10^{-5}$  —  $5 \times 10^{-5}$ , lowest obtainable in standard equipment

of this type. These pressures are read directly from the meter with a range from  $10^{-3}$  to approximately  $10^{-6}$  mm. of mercury.

**Description** — All working parts encased in streamlined cabinet. Pirani gauges supplied as standard equipment give pressure checks, enabling operator to determine instantly the whole condition of the system in terms of actual pressure. The pneumatic lift makes possible effortless raising, lowering of the bell jar while full visibility is retained during evaporation. Model number of this unit (just announced by Distillation Products) is LCL-500-3.

EASTMAN KODAK CO., Dept. CP, Rochester 4, N. Y.

When inquiring specify CP A1183 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

## FOR THESE QUESTIONS

1. How to really improve operations?
2. How to definitely cut maintenance?
3. How to effectively prevent spoilage?
4. How to insure a higher product quality?

## THIS ANSWER



## THESE REASONS!

- |  |                                |   |
|--|--------------------------------|---|
| 1. Maximum Capacity when needed most                           | 4. Smooth Operation            | 9. Constant Delivery Pressure             |
| 2. Accurate Pressure Control under toughest working conditions | 5. Tight Closure               | 10. Cost Saving Operation                 |
| 3. Trouble-free Service  | 6. Accurate Regulation         | 11. No Spoilage                           |
|  | 7. Speedier Production Results | 12. Practically zero in maintenance costs |
|  | 8. Elimination of Failures     |   |



Type 1000-HP normal size diaphragm. Made for delivery pressures over 30 lbs.

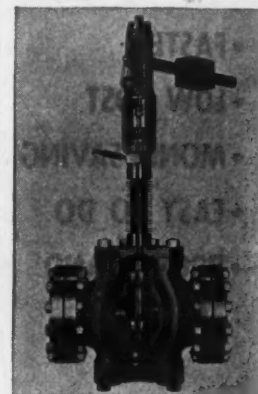
Type 1000-LP has large diaphragm. Made for delivery pressures under 30 lbs.

Write for bulletin "1000"

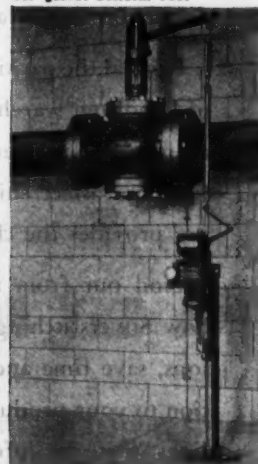
**CASH STANDARD CONTROLS.. VALVES**

**A. W. CASH COMPANY DECATUR, ILLINOIS**

**OTHER VALVES from the CASH STANDARD LINE**



Cash Standard Balanced Valves, Series 42, have no lost motion. Have roller guides that kill side strains; stop packing trouble. Practically no maintenance. Sizes  $\frac{1}{2}$ " to 12"; pressures up to 400 lbs. temperatures to 800° F. Bodies: iron, bronze, steel; all standard trims. With Air Cooled Packing Box (42-AC-R) shows above; or water cooled; or no cooling box. Made also with center guide. Bulletin 965.



The Cash Standard Type 100 Controller above is operating an 8" Type 42-R Balanced Valve, automatically reducing 250 lbs. down to 125 lbs. pressure, handling 200,000 lbs. steam per hour. Type 100 Controllers have lots of operating power, enough for any size valve; are fully compensated; have adjustable range; are very sensitive. Bulletin 963 covering the Controller and Bulletin 965 covering the Valve give complete and interesting details. Write for them.

When inquiring specify CP A1184 . . . see information request blank, pgs. 2-3

## \*SILVERSTITCHING

IS

- FASTER
- LOW COST
- MONEY SAVING
- EASY TO DO
- PROVED AND ACCEPTED



\*Silverstitching — stitching with steel — has proved again and again that it is the most practical way to close cartons . . . bottoms, tops and flaps.

In packing rooms, where fast, positive carton closing is required, Silverstitching keeps the carton supply ahead of needs of packers.

Beyond the packing line, where the hazards of handling, warehousing and shipping, and changes in temperature and humidity are likely to affect shipping packs, Silverstitching provides the closures that hold on.

Find out from the experiences of others how Silverstitching can strengthen your cartons, save time and money, and give protection to your products beyond the production line. Write for informative folder today.

### THE WIRE TO USE!

Acme Silverstitch stapling wire — for use with the Silverstitchers and other stitchers, comes in 10-pound, continuous length economy coils. It is true to size and temper, is rust-resisting, non-tangling, and makes clean strong stitches. For faster carton stitching use Silverstitchers and Silverstitch stapling wire.



**ACME STEEL COMPANY** 2808 ARCHER AVE.  
CHICAGO 8, ILLINOIS  
*Also Manufacturers of Acme Steelstrap and Strap-applying Equipment*

When inquiring specify CP A1185 — see information request blank, pgs. 2-3

## PRODUCTION

### Sewing Heads for Closing Heavy Duty Multi-Wall Paper Bags

*Vertical adjustment of both head and conveyor are advantage in speeding operations; closure made sift proof with filter cord*



HEAVY DUTY SEWING HEAD

**Features** — Simple, Positive operation; heads are easily convertible and interchangeable to allow for changes in bag closing needs. Fast operation, keyed to output of filling or weighing equipment. Workers quickly trained to operate these units.

**Description** — A variety of heads provides for closing all types of bags including paper bags, of all sizes, double bags, jute or cotton bags, etc. Double lock stitch and chain

**Uses** — For closing food product bags of paper and fabric in all sizes containing pigments, fertilizers, insulating materials, lime powders, such foods as coffee, feeds, grains, cereals, salt, seed, sugar, dried beans, peas, etc.



*Operates on A.C. Power*

THE  
**ALL-ELECTRIC  
ADJUSTABLE-SPEED  
DRIVE**





Operating from A-c. power circuits, Reliance V-S Drive provides all the advantages of a compact, flexible, easily controlled, reliable adjustable-speed drive; eliminates the disadvantages of mechanical hook-ups. For complete information, write for Bulletin 311.

**RELIANCE ELECTRIC & ENGINEERING COMPANY**  
1067 IVANHOE ROAD • CLEVELAND 10, OHIO  
SALES OFFICES IN PRINCIPAL CITIES

When inquiring specify CP A1186 — see information request blank, pgs. 2-3

## For Hard Usage and Heavy Loads Specify **AIRETOOL** Tube Cleaners and Expanders

The manufacture of tube cleaners and tube expanders that give maximum service under the most extreme conditions is Airetool's aim. And this aim is a reality because of Airetool's unique developments. In Cleaners they are Airetool's more powerful motor that can be loaded down to 50 rpm without stalling, the Airetool new form cutters that eliminate tracking and save tubes, the precision slip-fit construction of special alloy steel and other features. In Expanders they are the precision tested designs, the precision construction, their long life and others. No wonder users everywhere say Airetool Cleaners and Expanders are "Tops."


Airetool Cleaners are made for tubes 1/2" to 24" I.D.; straight or curved. Airetool Expanders are made for tubes 1/2" to 12" I.D.

Write for informative, instructive literature.

**AIRETOOL** MANUFACTURING COMPANY

500 Airetool & Yost-Superior Factory Bldg.  
SPRINGFIELD, O.

When inquiring specify CP A1187 — see information request blank, pgs. 2-3



## FACTS! about ROTARY PUMPS

This bulletin tells you why and how

**BLACKMER ROTARIES**

are SELF-ADJUSTING FOR WEAR

WRITE NOW FOR  
BULLETIN NO. 306 —

Facts About Rotary Pumps.  
Bulletin No. 302 —

Pump Engineering Data.

**BLACKMER PUMP COMPANY**  
1840 Century Ave., Grand Rapids 9, Michigan  
Serving Industry for More Than 40 Years

**POWER PUMPS - HAND PUMPS  
EZY-KLEEN STRAINERS**

When inquiring specify CP A1188 — see information request blank, pgs. 2-3



## PRODUCTION

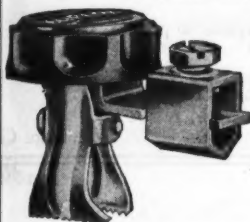
stitch both available. Sewing heads are offered for multi-wall paper bags (1) plain sewed closure; filter cord to seal punctures recommended; (2) plain sewed closure with top of bag folded over for strength and security; (3) tape bound sewed closure with strong reinforcing tape (paper) folded over top of bag and stitching running through tape and bag top. With filter cord this provides great strength and reliable sift-proof qualities. For paper bags up to 25 lb. size (1) plain sewed closure; (2) Double-tape sewed closure with strip of reinforcing paper tape on each side of bag top. Head is illustrated here. Literature describing various heads and complete bag closing and conveyor assemblies on request.

UNION SPECIAL MACHINE CO., Dept. CP, 400 N. Franklin St., Chicago, Ill.

When inquiring specify CP A1189 — see information request blank, pgs. 2-3

### Heavy Duty Temporary Test Clamp

*Large carrying capacity of 20-350 amperes on constant and intermittent duty*



TEST CLAMP  
Solderless lugs

**Uses** — For making heavy duty temporary connections; motor and meter testing, jumpers, cable and bar taps; battery charging and welding and other plant and laboratory operations.

**Features** — Twist of safety knob exerts great pressure, supplying large carrying capacity of 20-50 amperes on constant and intermittent duty. Solderless lugs for quick connections without special tools or cutting into wire; arranged to swivel around clamp, permitting wires and cables to hang in natural position upon installation.

**Description** — Available in six sizes to fit across ferrule and knife blade fuse clips, switch blades, bus bars, cables. Bulletin No. 7. (Clamp with solder lugs also available).

TRICO FUSE MFG. CO., Dept. CP, 2948 N. 5th St., Milwaukee, Wis.

When inquiring specify CP A1190 — see information request blank, pgs. 2-3

### Protectors for Machined Parts

*Made of fibre, kraft paper or cellulose acetate and shaped for exact fit of part*

**Uses** — Protection of fittings, exposed openings, threaded and machined parts, ends of tubing, etc.

**Features** — Accurately shaped to the article to be protected, — crimped, flared or perforated.

**Description** — These convenient internal and external safeguards are made of spiral wound fiber, kraft paper, or cellulose acetate, under heat treated compression. They are designed and constructed for great durability in protecting parts from dirt, dust, moisture, rust and damage in packing, storage and shipping. They are shaped to the article to be protected, cylindrical, square, rectangular or tapered with tolerances as close as  $\pm .003$  inches. Name of part and number can be printed in protector. Detailed information on request.

PRECISION PAPER TUBE CO., Dept. CP, 2033 W. Charleston St., Chicago 47, Ill.

When inquiring specify CP A1191 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

# No time for Trial and Error!



## DURAMETALLIC

### THE PACKING THAT IS "ENGINEERED FOR THE JOB"

The days of "any-old-packing-will-do" are gone forever.

For better sealing with long uninterrupted runs specify

**DURAMETALLIC** — the original Twisted Flexible

Metallic Packing. Submit your sealing problems to our Packing Engineers for free

analysis and recommendations.

WRITE FOR ILLUSTRATED  
BULLETINS AND FREE  
ENGINEERING COUNSEL



**DURAMETALLIC**



**CORPORATION**

KALAMAZOO

MICHIGAN

CHICAGO • DALLAS • DETROIT • FREDERICKSBURG, VA. • HOUSTON • KANSAS CITY, MO. • LOS ANGELES • MONTREAL  
NEWARK • NEW ORLEANS • PITTSBURGH • ST. LOUIS • SAN FRANCISCO • SEATTLE • TULSA • YOUNGSTOWN, OHIO

When inquiring specify Cy A1192 . . . see information request blank, pgs. 2-3

# The LINCOLN Powerluber

AN AIR-OPERATED HIGH-PRESSURE GREASE GUN...

for Fast, Thorough Lubrication of Chemical Plant Equipment



THE Lincoln Powerluber is an outstanding grease gun that will speed up the lubrication of chemical plant machinery. It is equipped with the famous Lincoln single-cylinder, full-automatic, compressed air-operated lubricant pump. It will dispense lubricant direct from an original 25 or 50-lb. refinery package placed in the container, or from the container itself which will hold 60-lbs. in bulk. Container and lid are made of heavy steel. Gasket fits snugly into lid and four screw-type clamps hold lid tightly in position. The unit is dust-proof and spill-proof. Carrying handles give it easy portability, or a sturdy two-wheel truck can be furnished.



The Lincoln Powerluber will save manpower and speed up the lubrication service in your plant. Ask your wholesaler or write us for complete information.

8148A

**LINCOLN** ENGINEERING COMPANY

1111 N. CENTRAL BRIDGE AVE., CHICAGO 24, ILL. U.S.A.

## PRODUCTION

### Mechanical Draft Water Cooling Towers

Water cooling tower designs and operating principles are given complete and interesting presentation in two color catalog. Characteristics of forced draft and induced draft types are discussed and numerous advantages of the latter explained. Illustrations show actual forced draft installations of various sizes. There are also several drawings indicating construction details of typical towers of both types. Table is also provided for determining relative humidity corresponding to any given Dry and Wet Bulb temperature. Copies on request.

C. H. WHEELER MFG. CO., Dept. CP, Lehigh & Sedgley Aves., Philadelphia, Pa.

When inquiring specify CP A1194 — see information request blank, pgs. 2-3

### Electrical & Mechanical Tachometers

Features and applications of tachometers offered as accessories to maker's variable speed drives are explained in illustrated bulletin — eight pages. Two types are available — mechanical and electrical. Either can be applied to all the maker's units. On applications where the rpm of either the variable speed shaft or tachometer driving shaft is beyond the range of 10:1, it is necessary to use the electrical type. It is also necessary to use electric type when precise speed indication is required. The mechanical type indicator is accurate to plus or minus 4%; electric type to plus or minus 1 1/2% of full scale reading. In addition to illustrations and dimensional diagrams of both types the bulletin also contains photos and descriptions of variable speed transmission, vari-speed motor pulley and vari-speed motor drive.

REEVES PULLEY CO., Dept. CP, Columbus, Ind.

When inquiring specify CP A1195 — see information request blank, pgs. 2-3

## Speed Steam Circulation



**SCHAUB DRAINTROL**

For Quick Heat-Up • Uniform Temperatures!

By constantly discharging AIR and CONDENSATE as they form, the Drainrol speeds steam circulation and assures quick heatup (without opening pet cocks) in the morning and uniform heat all day long.

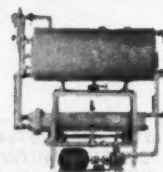
This inexpensive little drainage device accomplishes effective steam circulation within the machine. Since the Drainrol has no moving parts to wear or get out of order, there is no production stoppage because of an "out-of-order" trap.

Easy to install on existing "open" systems, Drainrols take the place of conventional traps... will provide for any drainage capacity required.

Write today for full information.

**FRED H. SCHAUB ENGINEERING CO., INC.**

327 W. Huron St.  
Chicago 10, Illinois



**THE SCHAUB HEAT RECLAIM SYSTEM**

By means of a patented heat exchanger, the Schaub Heat Reclaim System transfers heat (ordinarily lost through the vent of open systems) from the returns to the feed water on its way to the boiler. Resulting feed water temperatures of 240° to 260° increase boiler capacity at no greater cost. An RND priority will get you the Schaub Heat Reclaim System. WRITE FOR FULL DETAILS.

The Key to Boiler Room Efficiency  
**SCHAUB SYSTEMS**

When inquiring specify CP A1190 — see information request blank, pgs. 2-3

## GLASS

Makes an Excellent Filter Medium for Strongly Acid and Hot Solutions

To the process plant operator, chemical glass needs no introduction as a material highly resistant to most chemicals, hot or cold. Chemical glass, spun and woven into a filter medium, offers the same acid and temperature resistance.

F-M Glass Filter Medium is also durable in a mechanical wash being carefully spun into strong threads and woven into tough cloth. We can offer several different weaves, ranging from coarse to fine, from heavy to medium weight. And we offer trained technical advice, if desired, and laboratory work for determining the best grade of Glass Medium for your particular problem.

In writing please give as complete a picture as possible of your problem.

### FILTER MEDIA CORP.

Irvington-on-Hudson, N. Y.

Chicago

Salt Lake City

When inquiring specify CP A1197 — see information request blank, pgs. 2-3



## SPRACO NOZZLES

Write for NOZZLE CATALOG to  
**SPRAY ENGINEERING CO.**  
113 CENTRAL STREET • SOMERVILLE 45, MASS.

When inquiring specify CP A1198 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

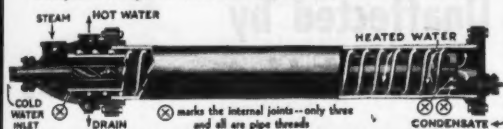
When inquiring specify CP A1193 — see information request blank, pgs. 2-3



## HOT WATER on the double!

• One operating man put it this way: "If you want hot water fast, you want the Johnson *Instant* Heater." Its simple design permits a more rugged construction which eliminates any need for reducing valves. You heat water with full steam pressure—more quickly, more efficiently, more economically. Today you can get all the advantages of this Johnson design at even lower cost, in the new all-steel heater. For use in process work, the copper tube heater can still be furnished.

Complete range of sizes and capacities. Write for bulletin



FOR: Instantaneous water heating • Storage tank heating • Feed water preheating • Booster service • Process liquid heating • Source of hot water for space heating.

THE JOHNSON CORPORATION

826 Wood St., Three Rivers, Michigan

**JOHNSON** *Instant* **HEATER**

When inquiring specify CP A1199 — see information request blank, pgs. 2-3

## Uniform Separation

FOOD PRODUCTS — CHEMICALS — METALLICS  
NON-METALLIC MINERALS

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of fine material within a range of 40 to 400 mesh.

- Greater Capacity
- Cleaner Trailings
- 99% Through 325 Mesh
- 25% to 30% greater recovery of fines
- Not affected by variation in speed or rate of feed.



The Gayco Separator  
Handles

SUCH PRODUCTS AS  
BARABASE GROUND HAIR  
CASEIN GROUND OATS  
COCOA POWDER GUM ARABIC  
CUTTSEED MEAL SOY FLOUR  
FERTILIZER SPICES  
SUGAR

**Universal Road Machinery Co.**

ROBERT M. GAY DIVISION 117 Liberty St. New York 6, N. Y.  
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal  
FACTORY & LABORATORY, KINGSTON, N. Y.

When inquiring specify CP A1200 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

## PRODUCTION

### Low Capacity Pumps Special Vane Rotary Units For Clean Liquids

In capacities as low as 1/2 gpm

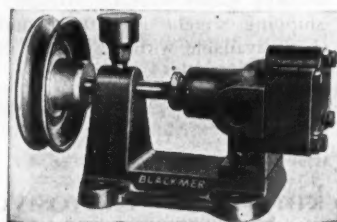
**Uses** — For pumping applications requiring low capacity, positive displacement, self-priming units. Typical of wide application are their use on industrial oil burners, hydraulic control devices and as lube oil pumps on heavy machinery. The pumps handle clean liquids having lubricating qualities, temperatures to 350° F.

**Features** — These pumps are of compact design, light weight and operate quietly. Built-in relief valve is optional, furnished with base and flexible coupling for direct connection to prime mover, for v or flat belt drive. "Bucket-design" makes these pumps self-adjusting for wear. Buckets easily replaced.



1/2 GPM PUMP

**Description** — Available in 2/3, 1 1/2, 3 1/2, 5 and 10 gpm sizes. The rated capacities are based on operating speeds of 1800 rpm. Constructions available: all iron, bronze fitted, all bronze. A recent addition is a 1/2 gpm. pump with discharge pressure of 100 psi; direct connected by flexible coupling to 1800 rpm motor. Available as pump only or



V-BELT DRIVE UNIT

the rotating elements may be supplied where the pump is installed as a part of the machine, (as available with other capacities mentioned). Dimensions: length 11 3/4", width 5 3/8", height 5", weight 15 3/4 lbs. Full details on request.

BLACKMER PUMP CO., Dept. CP,  
Grand Rapids 9, Mich.

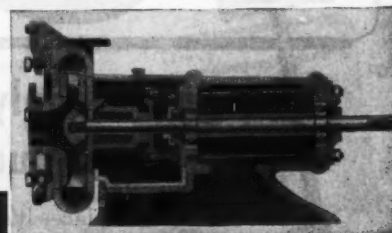
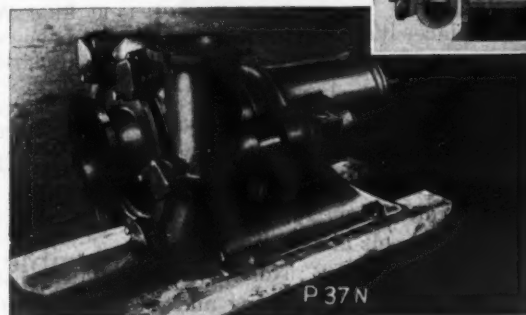
When inquiring specify CP A1201  
— see information request blank, pgs. 2-3

## Cutting Slurry Handling Costs in Coal Washing

The operations of a midwestern coal company involve handling 600 to 1,000 gallons per minute of coal washery slurry which has a high pyrites and sulphur content. An analysis shows 100% minus 3 mesh, 85% minus 6 mesh and a specific gravity of approximately 1.5. About 45 tons of solids per hour are handled. The conditions involve a 36' lift and discharging through 700' of 6" wood stave pipe.

In August, 1942 the company wrote us:

"We have been using for the past six or seven years a 4" rubber lined pump. The lining was entirely unsatisfactory due to the short life of the rubber and continual replacement. We then changed this pump over to a nickel steel alloy shell, and eliminated the rubber lining by the use of steel wearing plates. However, we were still wearing out a case about every six months and an impeller about every three months, which amounts to a high maintenance cost."



Above: sectional view of Amsco-Nagle Type "T" Pump. At left: Type "T" Pump of the design used to handle coal washery slurry.

Subsequently an Amsco-Nagle 6" Type "T," frame 19, manganese steel fitted pump like the unit pictured below was installed in this plant. We are now informed:

"The Amsco-Nagle pump was put into operation in January, 1943 and has operated 2 1/2 shifts (20 hours per day) without trouble. The only replacements (after 11 months) have been a new suction plate and a new impeller. The previous pump operated only about half as many hours daily. The present pump has never been repacked. It was necessary to pack the former pump every few days."

Where abrasive or corrosive liquids are handled, Amsco-Nagle pumps are the economical solution. Ask for Bulletin 940.

Send for Bulletin 941-W on Amsco Conservation Welding Rods.

**Amsco**  
AMERICAN MANGANESE STEEL DIVISION  
Chicago Heights, Illinois

FOUNDRIES AT CHICAGO HEIGHTS, ILL.; NEW CASTLE, DEL.; DENVER, COLO.; OAKLAND, CALIF.; LOS ANGELES, CALIF.; ST. LOUIS, MO.  
OFFICES IN PRINCIPAL CITIES

AMERICAN  
**Brake Shoe**  
COMPANY

When inquiring specify CP A1202 — see information request blank, pgs. 2-3

**Fast, easy pipe cuts  
with this 4-wheel**

**RIGID**



**Cuts cleanly with  
a quarter turn**

● In tight places it's a wonder. Short handle — and 4-wheels mean swift clean easy cuts, which you'll enjoy also where there's plenty of room to work. A beautifully balanced husky cutter that doesn't fool around, the stout frame making the special heat-treated steel wheels always cut true. Two sizes: No.42, 1/2" to 2"; No.44, 2 1/2" to 4". Buy it for better cutting and long service — at your Supply House.

Regular RIGID  
Cutter has fast  
cutting thin-blade  
wheels.

**RIGID**

**WORK-SAVER PIPE TOOLS**  
THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U.S.A.

When inquiring specify CP A1203 — see information request blank, pgs. 2-3

## PRODUCTION

### All Purpose Disc Grinders With Hydraulically Operated Controls

*Design provides for unusually high grinding area;  
table lowers to 4 in. from bottom of disc*



GRINDER hydraulically controlled

Uses — All purpose grinder for any type of metal, wood or plastic material.  
Features — Thirty-inch disc with twenty-six inch grinding area. Hydraulic controls which eliminate gears, worms and jack screws ordinarily employed for raising, lowering and tilting table.  
Description — Made in two similar models, regular and heavy-duty, the regular model using cloth or paper abrasive discs while the other uses an inch thick disc. An accurate positioning stop is provided on protractor for stopping table in any position from 45° down to 15° up. The unit has ventilated table with properly placed perforations to channel dust into highly efficient guards. The paper or cloth discs may be removed without removing the steel disc. A conveniently located handle operates the hydraulic valve and a 10 inch handwheel controls every hydraulic operation. Start and stop button control is mounted at eye level on the front of the machine. The table, 37 1/2 inches from the floor will tilt 45° down and 15° up, and can be lowered to four inches from the bottom of the disc. Protractor degrees are large and clearly engraved. The motor is mounted on a hinged pedestal over the shaft, driving the main shaft through 3 V-belts and thus making possible highly accurate speeds for efficient grinding. Disc speed is 800 RPM giving a rim speed of 6260 FPM. The regular model is equipped with a 3 HP, ball bearing, 1150 RPM AC 2 or 3 phase motor, while the heavy duty unit uses a 5 HP motor of the same type. Floor space required is 41 x 38 1/2 inches overall. Height is 57 3/8 inches. Total shipping weight is 2100 pounds. Catalog on request. (Unit available without priority under priority regulation E 1 B issued October 19).

KINDT COLLINS CO., Dept. CP, 12651 Elmwood Ave., Cleveland 13, Ohio.

When inquiring specify CP A1204 — see information request blank, pgs. 2-3

### Flexible Packing For Corrosive Conditions, Temperatures 2000°F.

*Made of alloy in wire form knitted into mesh and  
braided; resist vibration, non-scaling, non-  
magnetic, available in various shapes*

Uses — For services that require withstanding very high temperatures and extremely corrosive conditions.

Features — Resists corrosion by gases, alkalis and most acids. Provides a resilient vibration resistant packing that withstands temperatures up to 2000 degrees F. Made to fit individual requirements and is available in shapes that



### Unaffected by Acids or Alkalies

Permanent, uniform Colonial Porcelain offers many advantages for use in the chemical industries. It is unaffected by most acids, alkalis or fumes. Neither is it affected by rust, corrosion or weathering.

Colonial Porcelain molders are craftsmen. They can make nearly any shape to exact specifications. Send us samples or drawings for price estimates.

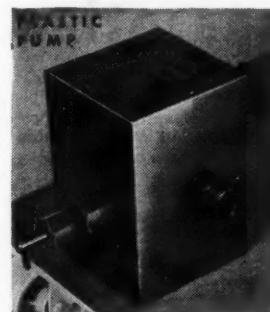


THE COLONIAL INSULATOR CO.

967 Grant St., Akron, Ohio

Chicago Office: 2753 W. North Ave.

When inquiring specify CP A1205 — see information request blank, pgs. 2-3



### THE ERTEL Plastic Pump FOR SEVERE CORROSIVE CONDITIONS

The Ertel Plastic Pump is superior in many ways to similar capacity pumps fabricated from corrosive resistant alloys. It will handle hot liquids up to 120°F. It is self-priming. Has built-in stainless steel manual by-pass for pressure and flow control. Individual performance tests before shipping cover entire range of service. Available in belt or direct drive units with capacity from 1 to 30 gpm.

The fully illustrated Ertel Catalog-12 describes the complete line of Ertel Liquid Handling Equipment. Send for a copy today; no obligation of course.

**ERTEL** ENGINEERING CORPORATION  
KINGSTON, NEW YORK  
NEW YORK CITY SALES OFFICE AND ENGINEERING  
10 WEST 42ND STREET, NEW YORK 18, N.Y.  
LIQUID HANDLING EQUIPMENT ENGINEERS

When inquiring specify CP A1206 — see information request blank, pgs. 2-3



## For Highest Quality Water STOKES ELECTRIC STILLS

with  
Automatic  
Overheat-Protection



CONTINUOUS DISCHARGE OF IMPURITIES.  
•  
TRIPLE VAPOR BAFFLES prevent entrainment.  
•  
LONG-LIFE, NON-CORROSIVE METAL AND PYREX GLASS CONSTRUCTION.

ECONOMICAL OF CURRENT AND WATER. Large Boiling Area and Counterflow Condenser.

MORE THAN 20,000 IN USE IN EXACTING SERVICE.

SIX SIZES  
from 1/2 to 1 1/2 g.p.h.  
Also Gas and Steam  
Heated Stills from 1/2 to  
100 g.p.h.

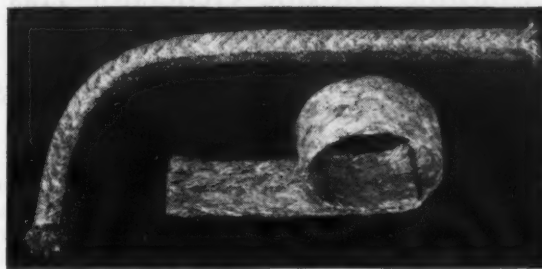
F. J. STOKES MACHINE CO.  
5974 Tabor Road Philadelphia 20, Pa.

**F.J. Stokes** WATER STILL



When inquiring specify CP A1207 — see information request blank, pgs. 2-3

## PRODUCTION



METALLIC-ASBESTOS PACKING

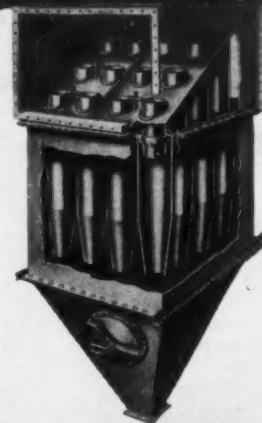
include strips, half-rounds and squares, in standard and special sizes.

*Description* — This flexible metallic packing is known as "Iconel". Originally developed to meet need for material which would stand-up under difficult conditions encountered in exhaust systems of airplanes with engines equipped with turbosuperchargers. Made of nickel-chromium-iron alloy in wire form, which is first knitted into mesh and then braided. In addition to high corrosion and temperature resistance, the packing is strong, resilient and both non-scaling and non-magnetic. One style is made with asbestos fibres interwoven with the metallic alloy and serving as a sealing agent.

JOHNS-MANVILLE, Dept. CP, 22 East 40th St., New York 16, N. Y.

When inquiring specify CP A1209 — see information request blank, pgs. 2-3

## Quick facts to remember... about MULTICLONE Dust Collectors!



- **SIMPLER TO INSTALL.** Single inlet and outlet headers eliminate complicated multiple manifolds. Easier to install, insulate, service!
- **MORE EFFICIENT.** Small diameter separating tubes give higher centrifugal forces, more thorough cleaning of gases!
- **MORE COMPACT.** The MULTICLONE requires less space, permitting installation in small areas and waste spaces of existing structures.
- **UNUSUALLY ADAPTABLE.** The MULTICLONE can be installed with side inlet-side outlet, top inlet-side outlet or side inlet-top outlet... which ever meets *your* requirements!

These are only a few of many MULTICLONE advantages. Send for booklet that gives complete story!



**WESTERN  
Precipitation  
CORPORATION**

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Office: 1023 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA  
CHRYSLER BLDG., NEW YORK 17 • 140 S. DEARBORN ST., CHICAGO 3  
HOBART BUILDING • SAN FRANCISCO 4, CALIFORNIA  
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

When inquiring specify CP A1210 — see information request blank, pgs. 2-3

## FREE! BULLETIN

### "HEAT TRANSFER THROUGH METALLIC WALLS"

Features Time-Saving Charts for Heat Transfer Calculations

● This 16 page bulletin tells in detail how to calculate rate of heat flow through metallic walls. It discusses thermal conductivity of the metals listed below under various operating conditions, effects of "fouling," films and corrosion on heat transfer and other phases of the subject.

Especially valuable is the series of charts which eliminate much tedious computation by giving the effect of thermal conductivity and wall thicknesses on heat transfer through eleven commonly used metals:

Copper	Lead
Aluminum 25	Cupro Nickel (70-30)
Red Brass (85-15)	Monel
Admiralty Brass	Stainless Steel (Type 430)
Mild Steel (SAE 1020)	Inconel, Stainless Steel
Nickel	(Types 304, 316, 321)

Much of this information has never before been included within one set of covers!

For free copy address:

THE INTERNATIONAL NICKEL COMPANY, INC.  
75 Wall Street New York 5, N. Y.

When inquiring specify CP A1208 — see information request blank, pgs. 2-3

## DO YOU KNOW UNI-FLO?

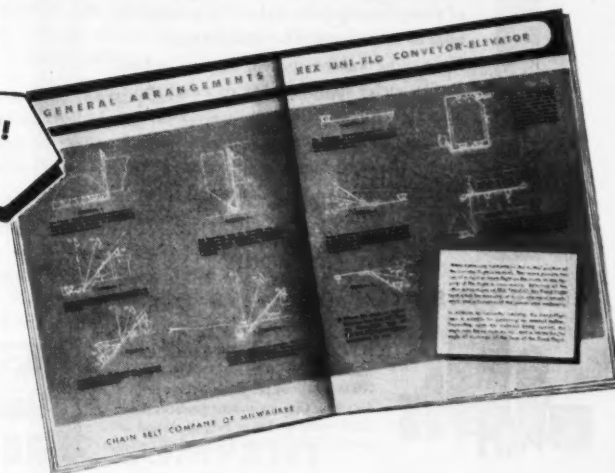
THIS BOOK TELLS YOU ALL ABOUT IT!  
WRITE FOR YOUR COPY TODAY!

If you want to know how to speed up production and lower the cost of moving your bulk chemicals... you'll want to know more about Rex UNI-FLO!

It's the modern and highly efficient conveyor method of transporting and elevating free-flowing, dusty, fine or granular materials in a continuous, uniform flow through your plant.

Completely self-feeding, the Rex Uni-Flo requires no auxiliary feeding devices. It's dust-free and clean. It's extremely flexible in application. It handles materials with a minimum of churning and degradation. It's the logical conveyor system to install... to save time, money, space and materials!

Send for your copy of the Rex Uni-Flo book. Find out for yourself the many advantages this Conveyor System offers for your chemicals handling. Write Chain Belt Company, 1694 West Bruce Street, Milwaukee 4, Wisconsin.



**CONVEYORS**

**CHAIN BELT COMPANY OF MILWAUKEE**

When inquiring specify CP A1211... see information request blank, pgs. 2-3

## DE-IONIZED WATER replaces DISTILLED WATER



### PORTABLE LABORATORY UNIT — 12 gallons of pure water per hour

Newest development of ILLCO-WAY engineers, the Laboratory De-ionizer is designed to meet the needs of laboratories, industrial plants and chemical manufacturers requiring a small volume of exceptionally pure water . . . comparable to that supplied by distillation. No cooling water required, no heat or fuel. Purity meter shows quality of water at all times. Already these units are meeting exacting standards in daily use . . . supplying the same high-purity water as the larger ILLCO-WAY De-ionizing Units now widely in use. Price and full details will be sent on request.

### FACTORY INSTALLATION



ILLCO-WAY De-ionizing Units, industrial size, have flow rates ranging up to 500,000 gallons per hour. Water produced by this equipment replaces distilled water at 1% to 10% of the cost of distilled water! Write for literature today!

**ILLINOIS WATER TREATMENT CO.**  
*Water Treatment Engineers*

849-1 CEDAR STREET



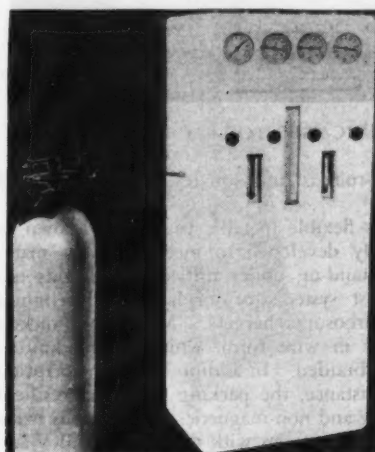
ROCKFORD, ILLINOIS

When inquiring specify CP A1212 — see information request blank, pgs. 2-3

## PRODUCTION

### Chlorine Dioxide Generator Has Reaction Tower in Unit

*Redesigned model of generator for producing dry chlorine dioxide gas from chlorine and dry sodium chlorite*



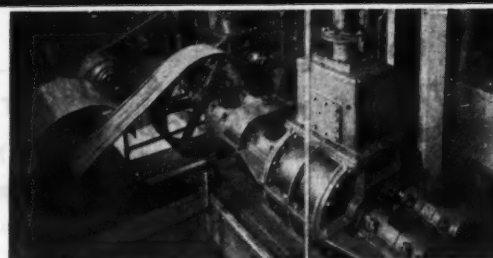
COMPACT UNIT, front, sides removable

**Uses** — Produces chlorine dioxide for dry bleaching of flour, starch, high fat soy flour and wool grease and for checking blue mold in citrus fruits. Also in bleaching soap, paper, textiles and in removing objectionable tastes and odors from public water supplies.

**Features** — Equipment makes it possible for user to

safely and conveniently generate bleach as required. **Description** — In this new model generator the chlorite is now contained in a reaction tower within the control unit,

## for Steady Suction



### and Low Power Costs

Simplified construction, oversize shafts and bearings, and the finest materials and workmanship found in "R-C" Rotary Positive Displacement Vacuum Pumps assure sustained efficiency and continuous operation, with negligible attention and maintenance. Capacities from 5 to 10,000 c.f.m., vacuum up to 25" hg. Write for Bulletin.

**ROOTS-CONNERSVILLE BLOWER CORP.**

One of the Dresser Industries  
501 Richland Ave.  
Connorsville, Ind.



**VACUUM  
PUMPS**

When inquiring specify CP A1213 — see information request blank, pgs. 2-3

## "Anets" LABORATORY CABINETS

*Automatic Control*



### PROCESSING \* TESTING with Precision Control

\* Use these "Anets" Laboratory Cabinets to control processing, fabrication and manufacturing to EXACT standards. Save time and money wasted by sub-standard and off-tolerance fabrication.

More — get finger-tip AUTOMATIC control of all temperature and humidity conditions within a few degrees. Write for Bulletin No. 170 today.

\* Processing fabric plastics  
\* Testing electrical equipment and aircraft parts

\* Incubation, germination, bacteriology culture  
\* Weathering. Moisture control.

**ANETSBERGER BROTHERS**

3322 ELSTON AVENUE  
Chicago 18, Illinois

When inquiring specify CP A1214 — see information request blank, pgs. 2-3

## BARBER-COLMAN

### MICRO SYSTEM FOR PROCESS CONTROL



BY USING a solenoid-loaded contact tongue, with the pull of the solenoid governed by a rheostat on the valve motor shaft, the Microtherm (lower picture) is able to position the Proportioning Valve (upper picture) so as to satisfy exactly any change in demand. Features include simple construction, no relays, and maximum power at all points of valve stroke. "Hunting" is eliminated and the valve is positioned quickly with "micrometer accuracy."

Write for Bulletin  
"CONTROLS FOR INDUSTRY"

**BARBER-COLMAN COMPANY**  
1201 ROCK ST. • ROCKFORD, ILL.

When inquiring specify CP A1215 — see information request blank, pgs. 2-3



## PRODUCTION

in contrast with earlier models (described in July 1944 Chemical Preview — CP 9911) which required separate chlorite towers. The new generator measures 5 x 2 x 1½ ft.

THE MATHIESON ALKALI WORKS (INC.), Dept. CP, 60 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A1216 — see information request blank, pgs. 2-3

### Heater Delivers Water 110-120 F.

Uses high pressure steam; only 3 pipe connections



**Uses** — Adapted to the widely varying requirements of processing plants in delivering hot water for washrooms and other purposes.

**Features** — Installation requires the attachment of only three pipes — high pressure steam supply, cold water inlet and hot water outlet. The head, coil and equipment are removable as a unit. This safety heater delivers water at 110 degrees F to 120 degrees F.

**Description** — Available in fourteen sizes: 200-3000 gph. Safety features include temperature regulator, tempering valve, safety release valve. In operation the

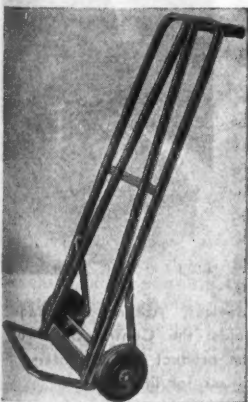
steam passes through the steam strainer and regulator into copper heating coil. The condensate formed is carried through a metering orifice which prevents the passage of live steam. The condensate then passes directly to the water space of the heater. Drip separator is available where steam is piped down to heater. Separator and trap are installed just in front of steam strainer to assure that dry steam will be piped to heater. Literature on request.

THE COE MFG. CO., Dept. CP, Paynesville, Ohio.

When inquiring specify CP A1217 — see information request blank, pgs. 2-3

### Light Weight One Hand Truck

Unit construction for greater strength and capacity



**Uses** — For quick, smooth, easy handling of small barrels, crates, packages.

**Features** — This truck combines minimum weight with maximum strength for splendid balance. Weight of truck is only twenty-seven pounds.

**Description** — The frame of this one-hand truck is of "channel-iron" all welded construction. Pick-up nose, axle support, and curb guide are all incorporated in one sturdy, shock resistant unit. As shown in the illustration, the truck is equipped with silent, mar-proof six inch molded-on rubber or cushion

TRUCK . . . shock resistant design

rubber wheels. Complete information on this one hand barrel unit and other models for wide range of requirements on request.

TOWSLEY TRUCKS, INC., Dept. CP, 1655 Elmore St., Cincinnati, Ohio.

When inquiring specify CP A1218 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

Here Is  
the **Simple Reason**  
*Why*

**GATES** *Synthetic Rubber*  
**V-Belts**

— Are Giving You Even **BETTER SERVICE**  
Than **Pre-War Belts** of **NATURAL RUBBER!**

**NO ONE**, before the war, had ever built a V-Belt that could stand the service now required by the Army's tanks, tractors, and self-propelled big guns. Gates has developed V-Belts that are now serving on army combat units all over the world—and has built these belts of synthetic rubber!

This fact is important to you now because every improvement developed by Gates for these Army belts has also been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

It is only rarely, of course, that improvements developed primarily for army combat use can be passed on immediately to the general user—but there are very good reasons why Gates has not been called upon to withhold these important V-Belt improvements from Industrial V-Belt users.

The plain fact is that no guns, no tanks, no airplanes can be produced unless V-Belts are supplied to drive the producing machines. It is equally clear that better V-Belts than ever before have been urgently needed to keep machines going on the forced-draft, war-production schedules that have had to be maintained 24 hours a day!

That is why Gates has been able to embody in the standard Gates Vulco Rope every V-Belt improvement which Gates specialized research has developed for use on the Army's motorized equipment—and that is why you are finding that your standard Gates synthetic rubber Vulco Ropes are today giving you better service than any V-Belts that were ever built before the war.

THE MARK OF *Gates* SPECIALIZED RESEARCH

## THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

**GATES VULCO ROPE DRIVES**

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549 West Washington

NEW YORK CITY 3  
215-219 Fourth Avenue

ATLANTA 2, GA.  
738 C & S National Bank Building

LOS ANGELES 21, CAL.  
2240 East Washington Boulevard

DENVER 17, COLO.  
999 South Broadway

DETROIT 4, MICH.  
8663 Grand River Avenue

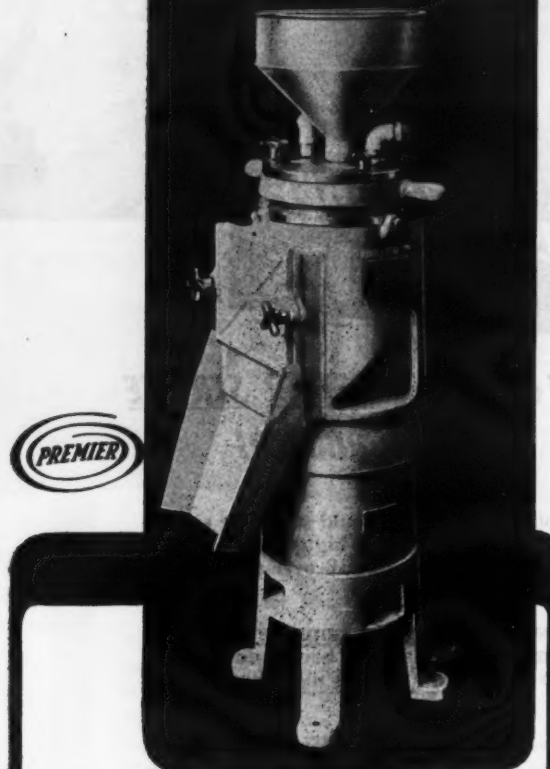
PORTLAND 9, ORE.  
333 N. W. 5th Avenue

DALLAS 2, TEXAS  
1710 N. Market Street

SAN FRANCISCO 2, CAL.  
1090 Bryant Street

When inquiring specify CP A1219 . . . see information request blank, pgs. 2-3

## PREMIER COLLOID MILLS



FOR MECHANICAL CONTROL  
of PARTICLE SIZES DOWN  
to ONE MICRON in

**HOMOGENIZING  
DISPERSING  
EMULSIFYING  
DISINTEGRATING**



Send for the brochure "Better  
Products, More Profitably Pro-  
cessed" . . . a booklet which out-  
lines the values of Premier Mill  
colloidal dispersion in food and  
chemical processing.

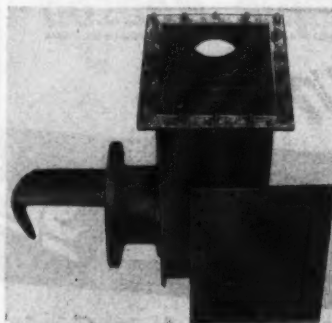
**PREMIER MILL CORPORATION**  
218 GENESEE STREET • GENEVA, NEW YORK  
General Sales Office: 110 East 42nd Street, New York

When inquiring specify CP A1220 — see information request blank, pgs. 2-3

## PRODUCTION

### Foam Chamber For Oil Tanks

*Foam discharge is deflected with rotary motion  
against tank shell and down to oil without  
undue disturbance of liquid or  
foam breakdown*



CHAMBER with deflector, plate

*Uses* — For foam fire protection on modern oil storage tanks of the pressure type. This chamber provides an easy means of applying a blanket of foam to oil burning surfaces yet prevents release of tank pressure.

*Description* — A glass diaphragm seals the inlet of the foam passage to tank, permitting the top plate of the delivery chamber to be removed when necessary without releasing vapors. Diaphragm is glazed in removable steel frame. Foam pressure when fire occurs is adequate to cause breakage. Newly designed reflector permanently attached to throat eliminates special baffle installation. Six inch adapter flange may be provided for mounting over opening cut in tank shell or tank manufacturer may furnish studded flange for welding around the opening. If chamber is to be installed later, blind flange may be bolted over opening.

AMERICAN-La FRANCE-FOAMITE CORP., Dept. CP,  
Elmira, N. Y.

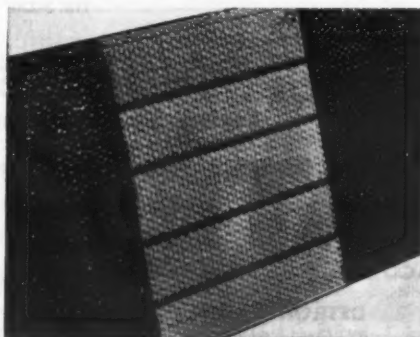
When inquiring specify CP A1221 — see information request blank, pgs. 2-3

### Plastic Coated Conveyor Belting

*Impervious to moisture; washes off easily; for foods,  
spices, drugs and similar materials*

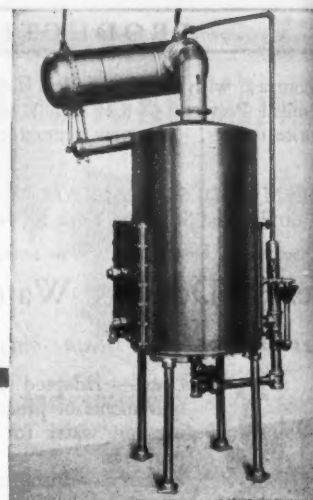
*Uses* — For conveying, hot or cold, moist or dry drugs, bulk materials, fruits and vegetables, baked goods, citrus pulps, dehydrated foods, spices and many other food products.

*Features* — Impervious to moisture, oils, greases, alkalis and acids. Washes off easily. Can withstand temperatures up to +240° Fahrenheit. Won't pick up odors. The



BELTING . . coating over woven carcass

## Have you a DISTILLED WATER PROBLEM?



IF SO, the chances  
are that Barn-  
stead's research  
and planning staff  
know the answer.  
For that is just as

much our business as manufacturing stills.

In fact one of the reasons for our leadership in the field is this research and planning department which answers your problems before they arise.

Your distilled water needs are safe in the hands of these experts—and there is a Barnstead Still for every need. Whether you use ½ gallon a day or 10,000 gallons, we have the right still for you.

**Barnstead**  
STILL & STERILIZER CO. INC.

66 LANESVILLE TERRACE, BOSTON 31, MASS.

When inquiring specify CP A1222 — see information request blank, pgs. 2-3

## Electronic LEVEL CONTROL

FOR ALL LIQUIDS  
AND  
CONDUCTING SOLIDS

• Trimount Electronic Level Controls are set for maintaining or keeping within desired limits the level of liquids or conducting solids within open or closed tanks, hoppers, bins, etc., and/or indicating the level by signals. This Control will operate solenoid or motor-driven valves, pumps, lights, bells, or other electrical devices. Absence of voltage permits use with all types liquids; the Control does not affect and is not affected by the product in the container. For full details write today and ask for literature.



**Trimount**  
INSTRUMENT CO.

37 WEST VAN BUREN STREET

CHICAGO 5, ILLINOIS

When inquiring specify CP A1223 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



10 P. M.  
at Corning



and home forty miles away

When a shift lets out at Corning Glass Works these days, the local bus stops become very busy spots. For men and women from "40 miles around" travel back and forth each day, from home to factory, to help make the glassware so urgently needed.

These new employees, loyal and willing, have helped to replace over 2200 Corning workers now in our country's service. They can, however, be used only on certain processes. For a skilled glass worker does not acquire that skill overnight. It takes years of experience and specialized training to become a good lamp shop worker.

That is why your laboratory supply dealer may at times be unable to furnish you with all the Pyrex, Vycor and Corning brand laboratory glassware you need; why Corning's lamp shop finds it difficult to extend its customary peacetime service.

You will, however, share Corning's satisfaction, because while the Home Front must sometimes wait, the needs of our Fighting Fronts are adequately supplied.

"Pyrex," "Vycor" and "Corning" are registered trade-marks and indicate manufacture by  
CORNING GLASS WORKS, CORNING, N. Y.

**PYREX** BALANCED FOR ALL-AROUND USE  
brand LABORATORY GLASSWARE

**CORNING**  
means  
Research in Glass

When inquiring specify CP A1224 — see information request blank, pgs. 2-3

Free

**Amioca**  
A NEW DOMESTIC STARCH

Booklet

Sixteen pages of photographs, charts, photomicrographs, and tables of comparison with other industrial starches that will supply manufacturers, laboratories, and chemists with the background information needed to visualize new uses for Amioca products—many of which are expected to represent entirely new fields of starch application.

Amioca—the new domestic starch obtained from Waxy Maize—is unique in its chemical structure and certain of the physical characteristics of its cooked pastes. Amioca should interest all users of starch and those who normally employ natural or synthetic gums and related products. Write for your copy—NOW! 270 Madison Avenue, New York 16, New York.

**National STARCH**  
PRODUCTS

STARCHES—AND SPECIALITIES WITH EASILY DEMONSTRATED SUPERIORITY

When inquiring specify CP A1225 — see information request blank, pgs. 2-3

JANUARY-FEBRUARY, 1945

## PRODUCTION

protective plastic coating stands up under most severe requirements and enables multiple life in comparison with uncoated belting.

**Description** — PlasTex has a semi-smooth, semi-glossy plastic coating over a solid woven cotton carcass. This plastic coating is available in single and double thicknesses and on one or both sides of the belting, according to the users individual needs. It is available in white or red colors.

BUFFALO WEAVING & BELTING CO., Dept. CP, 260 Chandler St., Buffalo 7, N. Y.

When inquiring specify CP A1226 — see information request blank, pgs. 2-3

## Wash Room and Plant Sanitation

"The Scope of Sanitation" is the properly descriptive title of a new and comprehensive catalog that combines detailed information on a complete selection of sanitation supplies and equipment with practical suggestions for determining requirements, making selections, handling various disinfecting operations etc. The first section is concerned with washroom sanitation; the second deals with personal protection and includes information on dermatitis prevention, hand cleaners, protective creams, protective garments; plant and building sanitation and floor maintenance are included in another section. Section on pest control describes products made especially for use in dairies, bakeries, candy factories, flour mills and describes a highly efficient automatic insecticide vaporizer. Copies of this catalog are available on request.

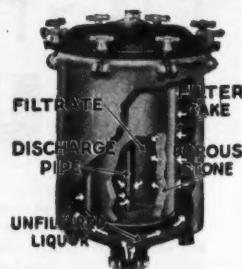
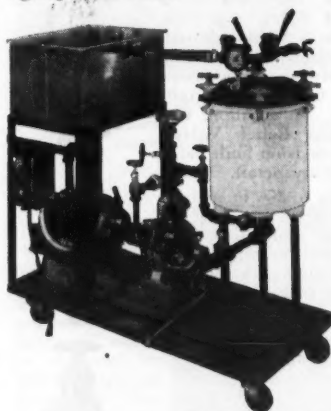
WEST DISINFECTING CO., Dept. CP, Long Island City 1, N. Y.

When inquiring specify CP A1227 — see information request blank, pgs. 2-3

## Complete Filter Stations FOR CLARIFICATION

Filter through stone . . . no  
cloths or pads to change

Swenson-LeVal construction assures clear filtrate at all times, because filter-aid is supported by rigid porous stone.



These complete Filter Stations include motor, pump, pre-coating tank, and all necessary valves and piping for handling incoming liquid and filtrate and disposal of filter cake. They offer special advantages for filtration of volatile, hazardous, corrosive, or costly products.

Ask for new Bulletin F-103 and give details of your problem.

**LEVAL FILTERS**  
**WHITING CORPORATION**

District engineers in 26 principal cities  
15667 Lathrop Ave. Harvey, Illinois

When inquiring specify CP A1228 — see information request blank, pgs. 2-3

**ACCURATE...**

*Ready to Weigh*

**ANYWHERE**



● Wherever predetermined quantities are weighed, packed, checked or tested... Toledo SPEEDWEIGH does the job *right!* Unbeatable accuracy of this scale prevents small errors which multiply to huge losses in production where each scale may handle hundreds of "over-under" weightings per day.

Toledo Speedweighs are compact (only 15 1/8" high) and easy to use anywhere. No leveling needed. Sensitive to 1/64 oz. Beam regularly graduated to 1/4 oz. Automatic lock poise. Capacity 5 lb. Center or end-tower models. Polished aluminum housing. Send for Bulletin 1415. Toledo Scale Company, Toledo, Ohio.

**TOLEDO**  
**SPEEDWEIGH**  
**SCALES**



When inquiring specify CP A1229 — see information request blank, pgs. 2-3

**PATTERSON-KELLEY**  
Heat Exchangers  
AND  
Process Equipment

**An  
UNUSUAL KETTLE  
WAS NEEDED . . .  
..... here it is!**



A prominent processing company asked our engineers to design a blending kettle which had to meet special structural and operating requirements.

Here is the kettle and here are a few of its special features:

- 1... heat transfer requirements called for unusually high steam pressure; to withstand the pressure, jackets would have to be so thick that the weight would be undesirable; so
- 2... coils involving much less metal were designed to handle the pressures to be used, thereby reducing total weight from 18,500 pounds to 6,500 pounds; and
- 3... these coils were designed in two semi-circular units so that they could be withdrawn for cleaning and maintenance through side ports. Lack of head room prevented the use of customary circular coils
- 4... lack of head room ruled out the customary stirrer location

Our engineers, who have designed many special types of kettles as well as a line of standard kettles to meet special processing problems, are well qualified by experience and knowledge to help you in the design of a kettle for your heating or blending problem.



1-PK-1

**THE PATTERSON-KELLEY Company, Inc.**

Main Office and Factory

120 WARREN STREET, EAST STROUDSBURG, PA.

BOSTON 16, 96-A Huntington Avenue • NEW YORK 17, 101 Park Avenue

PHILADELPHIA 3, 1700 Walnut Street • CHICAGO 4, Railway Exchange Building

Representatives in All Principal Cities

When inquiring specify CP A1230 — see information request blank, pgs. 2-3

## PRODUCTION

### Aluminum Ladders, Stages, Benches and Conveyors

*Light weight, strength and sanitary features make them exceptionally serviceable in process plants*



LIGHT WEIGHT BENCH

ding operations they are favored by service and repair men, painters, pipefitters etc.

**Features** — Light weight, stronger than wood, sanitary; do not rot, decay, splinter. When overloaded these aluminum ladders, benches, etc., do not break but merely bend. Quickly cleaned to meet sanitation requirements in plants producing products where this is imperative.

**Description** — A wide range of ladders is offered including folding, straight-type, channel, telescoping. The aluminum stages are covered with a strong planking of Douglas

**Uses** — The aluminum construction of these ladders, benches, stages, gangways and conveyors make them particularly for service in chemical and food processing plants including distilleries, breweries, dairies, ice plants. In addition to use by workers in production and hand-

## LIGHT... but STURDY

If you want to see how lightness can be combined with utmost sturdiness in a Portable Pop or Relief Valve, just look at and then study the FARRIS design. You'll find the bowl-shaped body generously proportioned, and the springs extra large... yet with no unnecessary weight anywhere on the valve. In addition, like all FARRIS Safety and Relief Valves, you'll find this a truly precision built valve of highest quality in every detail.

Built in sizes from 1/2 in. to 2 1/2 in. and for pressures to 250 lb. steam. Write for full information without obligation... you'll find it well worth while to become acquainted with this outstanding value in Pop Valves.



**FARRIS ENGINEERING COMPANY**  
350 Commercial Ave.,  
Patterson Park, N. J.

**Farris**  
RELIEF POP VALVES

When inquiring specify CP A1231 — see information request blank, pgs. 2-3

## DAVIS FLOAT BOXES MAKE LIQUID LEVEL CONTROL POSITIVE AND DEPENDABLE



Davis Float Boxes are used where the liquid level in a closed tank is the governing factor in control of valves, switches, motors and other devices. They can be supplied with all types of electrical switches, and air pilots as well as for mechanical connection to valves or other equipment. Combinations of Davis Float Boxes and Davis Control Valves are available to meet any needs. Other Davis fluid control equipment includes internal float units for direct, or pilot operation.

The Float Box illustrated above is No. 164 with mercury tube switch. ASK FOR BULLETIN 101-A.

## DAVIS REGULATOR COMPANY

2562 S. Washtenaw Avenue

Chicago, Illinois

When inquiring specify CP A1232 — see information request blank, pgs. 2-3

**ELECTRICAL**

## Time Controlling Instruments

Their correct application —  
use, design and functioning.

If you use one or a million such instruments — our specialized engineers, backed with our special equipment, are anxious to work with you to make that instrument "forgettable" forever.

Write us, telling us what you use  
Timing Devices for or what you  
have to be Time Controlled  
(electrically), and we will  
gladly lay before you,  
free, instructive and  
helpful data.



Type TD1

**the R.W. CRAMER COMPANY**

CENTERBROOK

CONNECTICUT

When inquiring specify CP A1233 — see information request blank, pgs. 2-3



## PRODUCTION

fit. The aluminum conveyors in both roller and wheel type are recommended for use in hazardous locations, as they do not throw sparks. The bench, (illustrated) is for use by workers who wear rubber boots and work in wet slippery places. It is made of hard alloy aluminum, 12 ins. wide, 18 ins. long, 15 ins. high. Weighs 5½ lbs. Top sheet or platform has embossed platform to prevent slipping. The feet can be supplied with wooden shoes or left plain. In addition to the line of benches, a selection of stools may also be available shortly. Further information on request.

ALUMINUM LADDER CO., Dept. CP, Worthington, Penna.

When inquiring specify CP A1234 — see information request blank, pgs. 2-3

### Research Testing Control With Accurate, Easily Operated Sheet Machine

Sheet machine is illustrated and its numerous advantages explained in descriptive folder. It permits mill operators to know the kind of a sheet that will be secured from batch before paper is made. It makes it possible to identify cause of any variation in sheet that is attributable to the raw materials or stuff treatment. In ten minutes it gives a bone dry sheet for testing consistency, freeness, mullen tear or any variance that may effect finished sheet. A quart of pulp from beater is all that is required for operation. Test on a carload of pulp, — freeness, hardness, etc. — can be quickly made. If mill has temperature and humidity controlled laboratory three hours additional will permit conditioned mullen, tear, fold, tensile, color curves to check with freeness and time curves. Accurate results are obtained with this machine which is extremely easy to operate. Folder Number A1144 on request.

THE NOBLE & WOOD MACHINE CO., Dept. CP, Hoosick Falls, N. Y.

When inquiring specify CP A1235 — see information request blank, pgs. 2-3

### Light Weight Belt Conveyor

*Adjustable mounting keeps engine level regardless of the angle of conveyor*



PORTABLE CONVEYOR

veying bulky materials. Mounting for gasoline engine is adjustable to keep engine level regardless of angle of conveyor.

**Description** — Conveyor comes equipped with 1½ HP gas engine; 2.3 HP for heavy duty service or is available without power unit. Normal belt speed is 425 f.p.m. Variable speed drive pulley is available if desired. Conveyor made in two lengths 13 feet, 9 inches and 20 feet.

COALTOTER CONVEYOR CO., Dept. CP, 310 S. Mich. Ave., Chicago, Ill.

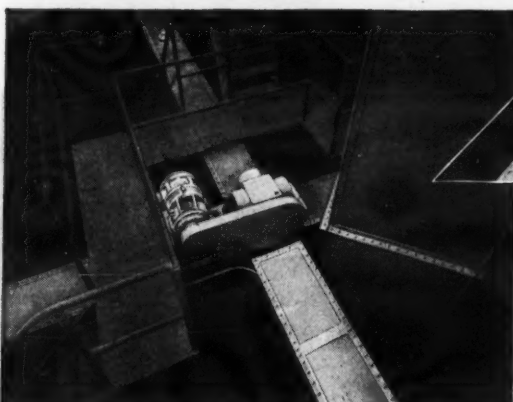
When inquiring specify CP A1236 — see information request blank, pgs. 2-3

## How Refined Beet Sugar is Handled Efficiently with

**LINK-BELT**  
SCREW CONVEYORS



Link-Belt bucket elevator brings sugar up to the four 14-inch double-flight Helicoid conveyors which deliver the sugar into top of storage silos.



Reclaiming conveyors, which bring sugar back from bottom of the four silos. At right is the bucket elevator shown in above illustration.

Power drive on main reclaiming conveyor. This conveyor discharges into conveyor at center right, which is reversed to return sugar to bagging bin. Conveyor at lower right feeds into bucket elevator which delivers to top of storage silos.



Link-Belt 14-inch double-flight Helicoid conveyor carries sugar to storage; or is reversed to reclaim sugar from storage to bagging bin. (Dust cover removed for photograph.)

● Link-Belt Helicoid conveyors and a silo storage system have greatly simplified the storage and handling of sugar at this plant. Helicoid Conveyors carry sugar from driers to storage; the same conveyors are reversed to bring the sugar back when it is needed for bagging. Storage in bags, resulting in re-bagging for shipment, has been eliminated.

For handling many bulk materials—flour, grain, chemicals, etc.—Link-Belt screw conveyors offer many advantages: high efficiency, low first cost, savings in power, maintenance, space. They operate in dust-proof, moisture-proof enclosures, with direct-connected reducer drives.

Engineered Application service and Link-Belt's complete line of conveyors and equipment can be extremely valuable to you when conveying systems are being installed. Call the nearest Link-Belt office, or write for Screw Conveyor Engineering Data Book 1289.

### LINK-BELT COMPANY

Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Toronto 8.  
Offices, Factory Branch Stores and distributors in principal cities.

When inquiring specify CP A1237 . . . see information request blank, pgs. 2-3

# S-O-S

## Fire Guard

HEAVY DUTY

vaporizing  
liquid  
chokes  
flame



1 Qt. Size

**SAFETY  
PHLARE**

S-O-S Fire Guard dispatches fire with a potent dose of vaporizing liquid. It is America's great utility fire extinguisher because of its handy size and overall effectiveness. S-O-S Fire Guard vaporizing liquid forms a heavy fire-smothering gas, quickly stifles flame, guards against post-ignition hazards. S-O-S Fire Guard resists freezing to approximately 48° below zero. Safety Phlare assures new pump action always.



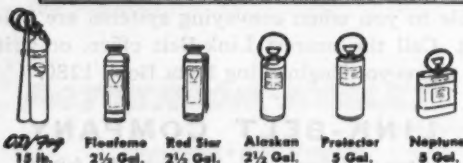
**WHERE  
and  
HOW  
to use**

**WHERE**—on electrical, chemical, gasoline, paint fires. Ideal for car, truck, plane, boat, home, factory use.

**HOW**—turn handle either way to release safety lock. Pump stream around the outer edge or base of fire.

IF IT'S **GENERAL** IT'S DEPENDABLE

**THE GENERAL DETROIT CORP.**  
2270 E. JEFFERSON AVE., DETROIT 7, MICH.  
Distributors in principal cities  
CHICAGO DALLAS NEW YORK  
West Coast Affiliate: The General Pacific Corp.  
Seattle • LOS ANGELES • San Francisco



**FREE** Large safety poster of S-O-S Fire Guard for wall display. Write Detroit office.

When Inquiring specify CP A1238 — see information request blank, pgs. 2-3

## PRODUCTION

### Dust Collectors For Grinders and Similar Units Use Compressed Air

*Positive suppression provided by wetting dust;  
sludge removed through clean-out opening*



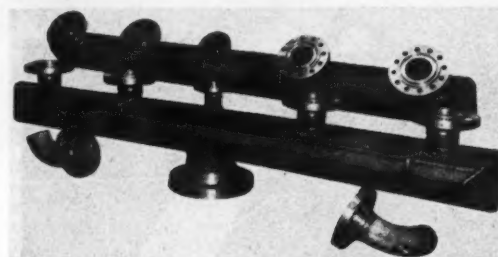
HOPPER for cleaning collector

air is unavailable, centrifugal pump is furnished.) In operation dust and fumes are drawn from hoods into unit by powerful aspirating nozzle connected to each hood. A

**Uses** — To be connected directly to one or two-wheel grinders or polishers, or for similar dust creating operations that are scattered.

**Features** — No filters, exhaust fans, or dust piping are used. No hoppers of dry dust to empty. Units are self-contained and can be placed where desired with entire safety.

**Description** — The unit employs compressed air available in most plants. (If



High pressure Type 347 stainless steel header, 12½ OD, ¾ wall, made from plates formed and welded with ring Type joint flanges, tested to 500 lb. pressure.

25 years of fabrication with all grades of alloys is available for special work.

Write for Bulletin CP 30

**ALLOY MANUFACTURING CO.**  
30th Street Pittsburgh, Pa.

When Inquiring specify CP A1239 — see information request blank, pgs. 2-3



## LO-VEYORS



### Standardized Vibrating Conveyors for Open or Dust-proof Operation

High efficiency, self-contained and ready to run. Choice of open or closed pan and tubular types. Get rid of belts, chains, idlers, rollers, etc. Drive unit in automatic balance and fully enclosed. Write, giving material and tonnage handled.

**AJAX** FLEXIBLE COUPLING CO.  
Incorporated 1920 WESTFIELD, N. Y.

When Inquiring specify CP A1240 — see information request blank, pgs. 2-3



### CESCO Snap-fast Face Shields

MAKE LIFE SAFER AND EASIER

**HERE'S WHY:** \*Clear, sturdy plastacele visors assure protection. \*New, exclusive CESCO design permits 15-second visor replacement — visors snap off and on with a turn of the fingers—held fast by spring clips. \*Extra comfortable—contour-shaped, adjustable headgear, soft leather sweatbands.

Write for complete details.  
**CHICAGO EYE SHIELD CO.**  
2337 Warren Blvd., Chicago 12, Illinois

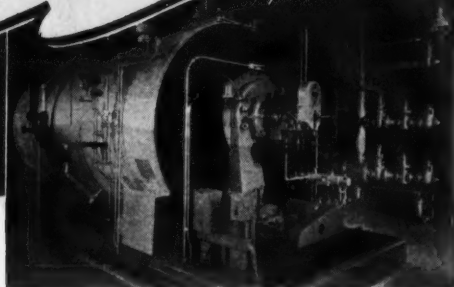


**CESCO** FOR SAFETY

When Inquiring specify CP A1241 — see information request blank, pgs. 2-3



# COMPACT



**Cleaver-Brooks Steam Generators Save Valuable Plant Space**  
Because of their exceptional steaming capacity, Cleaver-Brooks oil-fired steam generators often replace equipment much larger in over-all dimensions, having the same HP. capacity. Their compact construction save valuable plant space.  
For the time when normal conditions return — write for full information on the many modern advantages of Cleaver-Brooks steam generators. (20 to 500 HP. — Light or Heavy Fuel Oils).

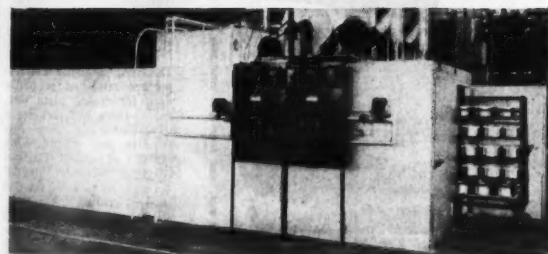
**CLEAVER-BROOKS COMPANY**

5124 N. 33rd STREET MILWAUKEE, WISCONSIN

## Cleaver-Brooks STEAM GENERATORS

When inquiring specify CP A1242 — see information request blank, pgs. 2-3

**plan now for IMPROVED  
DRYING and FINISHING  
in post war era**



If your plans require new drying and finishing equipment it will pay you to avail yourself of Kirk & Blum's 37 years of specialized engineering experience.

Our Engineering Staff can design and erect complete oven equipment for your special needs that is guaranteed to increase production, reduce fuel and labor costs and promote maximum safety.

Send for Booklet "Industrial Ovens"

**The KIRK & BLUM Manufacturing Co.**

An Organization of Engineers and Mechanics  
2833 SPRING GROVE AVE. CINCINNATI 25, OHIO

When inquiring specify CP A1243 — see information request blank, pgs. 2-3

## PRODUCTION

strong suction is produced and the dust laden air mixed with water. Dust settles to bottom of unit as sludge from which water is continuously removed and the sludge free water is then recirculated. Clean air is discharged into room. Bulletin FY-132 includes drawings of both types showing how collectors are connected to grinders and principal components such as the venturi mixing tube, eliminator plates, etc. Collectors are of heavy gauge steel construction and available in standard designs for single and double wheel grinders and various size wheel.

WHITING CORP., Dept. CP, Harvey, Ill.

When inquiring specify CP A1244 — see information request blank, pgs. 2-3

## Ball Bearing Cleaning Machine

*Bearings given individual treatment under pressure with cleaning, rinsing solutions after preliminary handling in rotating basket*



CLEANER with rotary & pressure units

**Features** — The tank in which the pressure cleaning mechanism is located is sealed during operation and is illuminated by plastic shielded lamp and process is visible through glass lid. During the pressure cleaning operation, the cleaning compound is continuously filtered preventing any carry over of contamination from one bearing to another.

**Description** — Fifty to one hundred ball bearings of various sizes may be pre-cleaned in the basket of the rotary unit. In the pressure cleaning unit bearing is placed on spindle and fitted into a stepped coned head through which L & R Rinsing Fluid is forced. Surplus cleaning fluid is removed from bearing by air pressure through the stepped coned head. Head can accommodate eleven sizes of bearings and can be supplied to conform to bearing sizes user specifies. The spindle may be controlled in a clockwise or counter-clockwise direction. All controls are mounted on panel at front of machine. Current 110 V, AC.

L. & R. MFG. CO., Dept. CP, 577 Elm St., Arlington, N. J.

When inquiring specify CP A1245 — see information request blank, pgs. 2-3

For complete information regarding products described in this issue a handy request slip is provided between pages 2 and 3. Check the items that interest you, fill in name and address and send it to publishers. Information will come to you promptly.

# Zenith

THE PULP PRESS THAT DEWATERS  
ANY PULP OR SLURRY AT THE  
RATE OF UP TO 15 TONS PER HOUR



If your manufacturing process requires the dewatering of any crystalline, granular or fibrous slurries, you will want to know more about the giant Zenith Pulp Press. This continuous press dewaterers up to fifteen tons of pulp in one hour. Pressure is transmitted (see cut away view) by means of a slowly revolving spiral-bladed spindle. Because of its built-in heating system and design of its walls, draining is doubly efficient. For complete facts write today to:

**JACKSON & CHURCH CO., SAGINAW, MICHIGAN**

When inquiring specify CP A1246 — see information request blank, pgs. 2-3



Armstrong traps on chlorobenzene stills, in phenol plant.

## 16 Armstrong Traps save 800 gals. fuel oil per week in chemical plant

Chemical plants represent another industry which uses thousands of Armstrong inverted-bucket steam traps to save fuel, money, heating time, maintenance and manpower.

A typical example from our files is that of a chemical manufacturer in Iowa, which effected a cut in fuel consumption from 1,500 to 700 gallons a week by the installation of 16 Armstrong traps. The savings in fuel are \$2,500 a year. In addition, the management reported a reduction in boiler capacity requirements from 125 to 80 HP, and faster heating and more uniform temperatures of steam-heated kettles and other processing equipment.

Armstrong traps not only pass condensate as fast as it forms, without leakage of steam, but also eliminate air from the system and have the ability to handle all ordinary sludge and sediment. Armstrong traps do this through a combination of design features found in no other method of draining condensate. The patented free-floating valve and other engineering components insure freedom from wiredrawing in the valve orifice, permit holding tight against vacuum, and insure long life with negligible maintenance. Considerably over a million in use. Available in straight-through, angle and vertical piping styles, in all sizes and pressures.

The Armstrong Trap Book contains valuable data on trap operation, installation and service. We'll be glad to send you a copy.



**ARMSTRONG MACHINE WORKS**  
880 Maple Street • Three Rivers, Michigan

# Armstrong

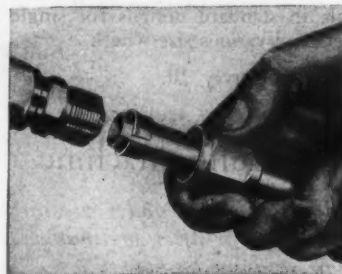
STEAM TRAPS • AIR TRAPS • PURGERS • HUMIDIFIERS

When inquiring specify CP A1247 — see information request blank, pgs. 2-3

## PRODUCTION

### Packless Self-Flaring Coupling For Plastic Tubing

*Flare formed in one simple operation; tube is not preheated; full range of sizes*



READY FOR ASSEMBLY . . . no tube twisting, no flaring tools required

**Uses** — As a self-flaring coupling for plastic tubing that can be applied right on the job.

**Features** — No flaring tools are required. The plastic tubing is not preheated. A perfect uniform-walled flare is formed by the brass fitting itself in one simple operation of assembly. The floating ring in the nut gives a union effect which eliminates twisting, distortion, and split ends. The split ring conforms snugly to the tubing, thus preventing tube displacement, maintaining uniform wall thickness without tapering toward the end, an important factor for strength. A positive leak-proof connection is afforded and there is no possibility of the tubing pulling away from the fitting under pressure. Severe factory hydraulic tests, simulating installation pressures demonstrate



TYGON paint will lengthen the usable life of any equipment subject to the action of corrosive fumes, condensates or spillage.

Such items as blowers, dust collectors, pumps, chemical storage equipment, pickling and plating tanks — all will last longer and require less frequent repairs when protected with TYGON paint.

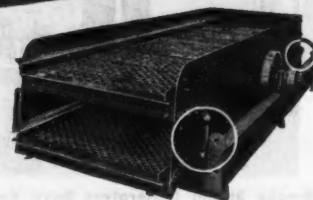
Laboratory tests prove that TYGON paint possesses the greatest general resistance to corrosive attack of any paint made.

Write today for Bulletin 1610  
PROCESS EQUIPMENT DIVISION  
**THE UNITED STATES STONEWARE COMPANY**  
AKRON, OHIO

When inquiring specify CP A1248 — see information request blank, pgs. 2-3

**SECO PC\* Vibrating Screens**  
+ Seco Engineering Advice  
= MORE TONS PER HOUR  
Screening Wet or Dry Materials

**PROVED  
IN USE  
EVERYWHERE**



Seco specializes in manufacturing vibrating screens. Our engineers are screening experts. With this background, we have been able to solve a wide variety of chemical screening problems covering an even wider variety of materials. Get a Seco, the screen that gives 100% efficient screening action under all load conditions, plus expert advice in helping you get the right model for your needs. Send us your present or postwar screening problem, today.

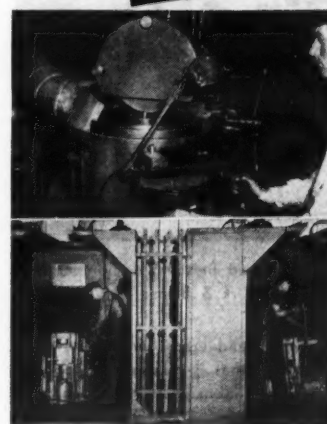
Write for Free Catalog Dept. E

**SECO**

**SCREEN EQUIPMENT CO., INC.**  
9 Lafayette Avenue, Buffalo 13, N. Y.

When inquiring specify CP A1249 — see information request blank, pgs. 2-3

**Performance**  
PROVES DUSTUBE  
EFFICIENCY



**\$12,000 Yearly Savings**

Tin, lead, graphite and copper are employed in powder form for clutch plate wearing surfaces and particles of these materials arise from grinding and pressing operations at the Cleveland Graphite Bronze Company. Through the well designed Dustube control system reduction averages nearly 1,000 pounds of tin, lead, graphite and copper weekly (worth 20¢ a pound) and another 500 pounds of graphite dust (5¢ a pound).

**Dust-Free Grinding**

Each grinding booth at the Lodge and Shipley Machine Tool Company has its own Dustube and the high efficiency in which all dust is exhausted eliminates the need of respirators by the operators during routine grinding. Complete Dustube dust control and ventilation of the booths is provided by exhausting dust-laden air at rates up to 15500 CFM. American Foundry Equipment Co., 507 S. Birch Street, Mishawaka, Indiana.

**AMERICAN dustube**

When inquiring specify CP A1250 — see information request blank, pgs. 2-3



## PRODUCTION

This packless self-flaring coupling can be reused repeatedly, all that is necessary is to disassemble the fitting, spread the split ring, slip it further back on the tube, and reassemble. Only the simplest shop tools are required and assembly may be made right on the job.

**Description** — A full range of sizes is available for the following O. D. tube sizes:  $\frac{1}{4}$ ,  $\frac{5}{16}$ ,  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{5}{8}$ ,  $\frac{3}{4}$  inches. Furnished in brass unless otherwise specified. The fittings are made to accommodate tolerances of plus or minus .005 inches. The split in the split ring permits adjustment for different tolerances. Bulletin is available on request.

PACKLESS METAL PRODUCTS CORP., Dept. CP, 31 Winthrop Ave., New Rochelle, N. Y.

When inquiring specify CP A1251 — see information request blank, pgs. 2-3

## Practical Suggestions and Facts on Labeling Adhesives, Methods and Machines

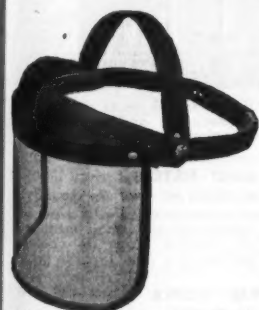
A handbook of thirty-two pages titled, "Successful Bottle Labeling," contains a concise presentation of practical data compiled in collaboration with manufacturers of labeling machines, bottles and labels. A convenient, useful reference medium for experienced bottling men, it should prove of helpful interest to new workers in more quickly gaining knowledge of bottle labeling procedure. Some of the subjects discussed are: Methods of Labeling, Label Specifications, Grain Determination, Handling Adhesives, Regulation and Care of Machines and suggestions for dealing with a number of the various difficulties encountered in labeling operations. Copies available on request.

NATIONAL ADHESIVES DIV. (National Starch Products, Inc.), Dept. CP, 270 Madison Ave., New York 16, N. Y.

When inquiring specify CP A1252 — see information request blank, pgs. 2-3

## Combination Eye and Face Shield

Selection of four visor colors; fibre deflector protects against sparks



**Uses** — For eye and face protection of workers exposed to hazards of dust, flying chips, particles, sparks, etc.

**Features** — Light weight and easily fitted to any head by means of sliding fibre head strap. Leather sweat band contributes to added comfort and the fibre spark deflector provides an additional measure of protection.

**SHIELD** made in 3 visor depths

**Description** — Fully bound, flexible, quickly replaceable snap-on Plastacele visor provides wide, unhampered vision and is adjustable at any angle. Standard visor depth is six inches — others supplied in depths of four and eight inches. Four shades: clear, light, medium and dark green. Catalog Number is Type J-1.

JACKSON PRODUCTS, Dept. CP, 3265 Wight St., Detroit 7, Mich.

When inquiring specify CP A1253 — see information request blank, pgs. 2-3

## Barrel Truck

### Loads Automatically

Item S-911  
\$3350



Sliding catch grips until released by operator; note long hook for bilge type barrel.

Barrels weighing up to 1,000 lbs. handled with ease... truck weighs but 85 lbs. To load, shove truck up against barrel or drum, then drop sliding steel catch over rim... pull toward you and truck loads automatically—loads from row as easily as when barrel stands alone.

Sturdily constructed of heavy steel. 10" metal wheels. Greatest width only 22", permitting it to pass through narrow aisles and doors.



\$5550

## Utilities Rack on Wheels

Item NS-415

For handling parts or small items in course of production or assembly. Use at machine and also for conveying materials from place to place. All steel, welded construction. Width 24", height 50", length 48" overall. Clearance between shelves 12". Four 6" roller bearing casters, two of which are rigid and two swivel. Weight approximately 220 lbs. Finished in P.S. gray.

## When Ordering . . . .

Always give "Item" number; this will help prevent error.

Please accompany orders with your priority; it will avoid unnecessary delay.

All prices are f.o.b. Detroit.

Designers and builders of all types Trucks, Skids, Pallets, Platforms, Racks, Boxes, Bins, Tables, for Pick-up, Loading, Moving, Shipping, Dumping and Storage.



## Wood Box-Metal Bound

### "Tilt-Type"

A general utility push truck, "Tilt Type" for easy wheeling and short turning of corners. Built of all hard wood, completely metal bound, all welded construction, no bolts used. Two rigid and two swivel, 5" metal casters,  $\frac{1}{2}$ " tilt. Metal parts painted P.S. standard gray, wood left natural.

### TWO STANDARD SIZES

Item PS-91A . . . . . \$2950  
Box measures 24" wide, 36" long, 26" high, weight 185 lbs.

Item PS-91B . . . . . \$3350  
Box measures 28" wide, 48" long, 30" high, weight 260 lbs.



Item B-205  
\$1250

## Drum-Barrel Sling

### Half-Ton Capacity

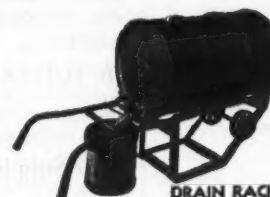
Will handle drum for draining purposes. Can pick up drum from lying position and set on end. Use for loading on or unloading truck and for general purpose handling. Will handle barrels, drums, kegs, anything with a lip such as on steel drum or wooden barrel. Simple in construction... easy to operate... heavily welded chain, forged grab hooks. Finished in standard P.S. gray.



PICK-UP



TRUCK



DRAIN RACK

## COMBINATION Truck and Drain Rack

### Loads Automatically

To load, tilt truck against drum, sliding steel fingers down to engage top rim of drum; then rock truck back to wheeling position, and loading is automatic.

Sturdy frame and free-rolling wheels make easy trucking of heaviest drums.

Slight downward push on truck handles raises wheels and lays rack on floor, thus providing convenient drain for drum.

Heavy angle iron frame, tubular handles, all welded construction. Two eight-inch roller bearing wheels. Weight approximately 90 lbs.

### TWO STYLES . . . "WELDED ON" and "DETACHABLE" HANDLES

Item NS-506 . . . . . \$4250  
This item has handles welded to frame.

Item NS-506DH . . . . . \$4450  
This truck has detachable handles.

Item NS-506R . . . . . \$3250  
This is item NS-506DH without handles.

Item NS-506H . . . . . \$1200  
This is the detachable handles only, for use with Item NS-506R.

Item NS-506DH (right), has detachable handles, so that when used as drain or storage rack the handles can be pulled out to conserve floor space; thus one pair of handles can be made to serve any number of trucks.



DETACHABLE HANDLES

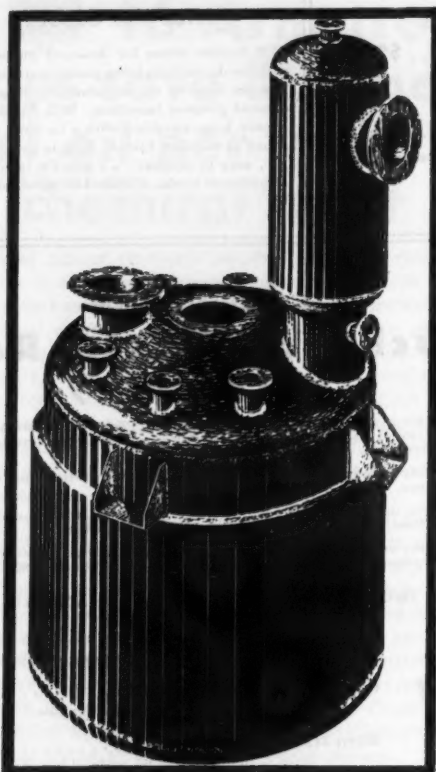
**Palmer Shile Co.**  
7128 West Jefferson Ave., DETROIT 17, MICH.

When inquiring specify CP A1254 . . . see information request blank, pgs. 2-3

PRECISION-FABRICATION  
is always  
AVAILABLE IN . . .

**National  
Welded Products**  
From OPEN HEARTH, STAINLESS,  
ALLOY and CLAD Steels

A recent National Chemical  
Processing Fabrication.



WHEN your plans call for complete precision, close tolerances, master craftsmanship—in any standard, special steel or alloy, up to 1½" and to 60 ton capacity—look to **National**. Here you will find unexcelled manufacturing facilities, with modern labor saving equipment—an organization capable of fabricating the most intricate industrial or processing equipment, economically and speedily.

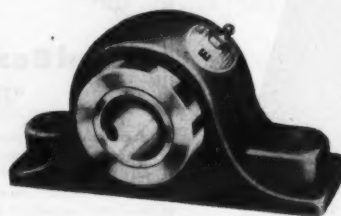
**National**  
**ANNEALING BOX COMPANY**  
API ASME U-68 U-69 Codes · Stress Relieving · X-ray  
Pledged to Quality Since 1895  
**WASHINGTON, PENNA.**

When inquiring specify CP A1255 — see information request blank, pgs. 2-3

## PRODUCTION

### Flanged, Pillow Block Bearings For 30,000 Hrs. Service

*Easily fastened; labyrinth seals; designed to compensate against normal misalignment*



BEARING . . compact housing

of standard selection tables applying to the complete line. **Features** — The method of fastening to the shaft is simple and effective. On each end of the extended inner race is a steel collar having two headless set screws spaced 120° apart and extending through clearance holes in the inner race to the shaft. These four set screws provide a positive lock to prevent rotation of the inner race on the shaft. **Description** — Housings are compact and rugged and are precision machined to close tolerances on automatic machines. Simple, effective labyrinth seals prevent loss of lubricant and protect bearings against damage from dust, dirt, and moisture. These seals are equally effective whether the bearing is on or off the shaft. The bearings are completely assembled, lubricated and adjusted at the factory. While not fully aligning these bearings have enough self-alignment inherent in the design and arrangement of the Timken rollers to adjust for any normal misalignment. Complete details on these Dodge-Timken bearing "Type E" on request.

DODGE MFG. CO., Dept. CP, Mishawaka, Ind.

When inquiring specify CP A1256 — see information request blank, pgs. 2-3

### Adhesive For V-2 Export Cases

*Used in original form for machine or brush application; odorless, non-toxic*

**Uses** — For sealing V-2 export shipping cases. **Description** — This material is a white, liquid resin emulsion adhesive that is used just as it comes, for either machine or brush application. It is certified by the maker to meet new specification JAN-A-101. It sticks quickly and makes a tough secure bond. It is white in color but dries nearly transparent, is practically odorless and completely non-toxic.

H. B. FULLER CO., Dept. CP, 255 Eagle St., St. Paul 2, Minn.

When inquiring specify CP A1257 — see information request blank, pgs. 2-3

### Air-Supplied Protective Hoods Weigh Only One Half Pound

An air-supplied hood, furnished in three different types to meet a wide range of requirements, has its various features interestingly presented in a two-color illustrated bulletin. The hoods protect eyes, ears, neck and respiratory organs from harmful and irritating substances, mists, vapors and dusts. A constant supply of fresh, clean air in quantities as low as five cfm and at a pressure of three quarters of a pound is fed into the hood at the rear. The amount of air may be varied depending upon the type of hood and the severity of working conditions. The air is fed through a distributing tube which is held in position at the oper-

**SPEEDS HANDLING**  
*Saves Labor*

**SABIN**  
*One-Man*  
**TRUCK**

**For  
DRUMS,  
BARRELS**



Type L-3

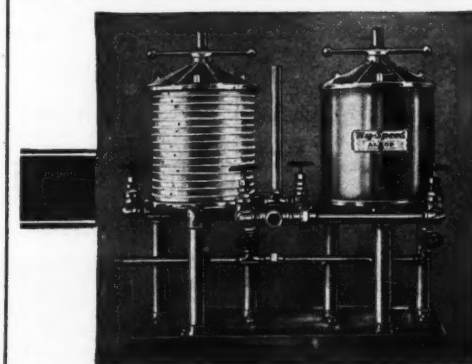
● This remarkable truck makes it easy for one man, without helpers, to handle up to 800 lb. drum or barrel loads. No manual lifting. No weight to carry. Load moves easily on roller bearing wheels. **EXCLUSIVE THIRD-WHEEL FEATURE** provides foot pedal for easy break-over, gives better load support and balance and permits loaded truck to stand alone.

WRITE FOR FREE BULLETIN.

**The Sabin Machine Co.**  
6536 Carnegie Ave.  
Cleveland, Ohio

**Price \$33<sup>50</sup>**  
with semi-steel roller  
bearing wheels.  
**SHIPPED ON APPROVAL**  
Send Trial Order

When inquiring specify CP A1258 — see information request blank, pgs. 2-3



Most liquids used in the chemical and allied fields should be filtered to remove impurities, dirt, sediment and foreign material to produce a highly clarified, cloudless liquid for effective sales appeal.

#### ALSOP "SEALED DISC" FILTERS

are doing just this in hundreds of plants all over the country.

They filter more completely and economically with ease of operation than any other type. Leakproof and small compact units handle large capacities, or multiple types as above.

For oils of all kinds we have perfected a new type of filter known as

#### ALSOP "DISC-PAK" FILTER

Write for our new filter book illustrating our complete line of liquid and oil filters. Sent on request.

**ALSOP ENGINEERING CORP.**

16 Alsop Square

Milford, Conn.

**ALSOP "SEALED DISC" FILTERS**

When inquiring specify CP A1259 — see information request blank, pgs. 2-3



## Moveable Sacking Scales for Free Flowing Chemicals . . .

Large manufacturers of chemicals will be interested in the new EXACT WEIGHT portable sacking scale (Model 2227) for filling, weighing and checking hundred pound bags. This new unit features (1) accuracy (2) fast operation (3) mobility — use of scale from many hoppers. Equipped with the famous lock-jaw bagholder, revolving dial and clam shell hopper, all mounted on a roller platform. Equipment complete and ready for immediate use. Write for complete specifications.



NEW!

**INDUSTRIAL PRECISION**  
**Exact Weight Scales**

**THE EXACT WEIGHT SCALE COMPANY**

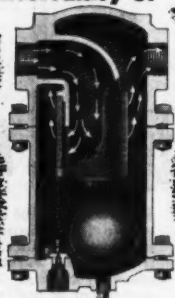
31 W. FIFTH AVE.  
DEPT E, 1104 BAY ST.

COLUMBUS 8, OHIO  
TORONTO, CANADA

When inquiring specify CP A1260 — see information request blank, pgs. 2-3

✓Eliminates need for external traps  
✓Ends the bother and uncertainty of manual draining

**The NEW Johnson  
SELF DRAINING  
Compressed Air  
Separator**



•Here is the time-proved Johnson Separator with a complete trap mechanism built right in—today's newest idea in Separator design. It combines the two best principles of separation—first allows the air to expand slightly, then changes direction of flow abruptly many times with the "thousand baffles"—removes more than 99% of water, dirt and oil. The simple trap mechanism, mounted on bottom plate for easy access, releases the accumulated moisture from the Separator, automatically, whenever necessary.

Johnson Separation  
Devices include  
Separators for  
Compressed air or  
Steam, After Coolers,  
Oil Absorbers.

WRITE FOR CATALOG

**The Johnson Corporation**

826 WOOD STREET THREE RIVERS, MICHIGAN

When inquiring specify CP A1261 — see information request blank, pgs. 2-3

## PRODUCTION

ator's waist by a belt clip. From the tube it enters a removable diffuser which allows the air to expand and discharge at the top of the hood. The complete hood assembly weighs half a pound. "Vapo" hood has center of eye-mask cut out so that vision will not be hampered by mist. Vapors are prevented from entering by air flowing out through opening. This model is useful in workers spraying paint and other liquids. "Fumo" hood has closed eye-mask and is used in cleaning of tanks and in metallizing. The "All-Purpose" hood has a large removable eye-mask. Bulletin on request.

WESLEY A. GIBBONS, Dept. CP, Birmingham, Mich.

When inquiring specify CP A1262 — see information request blank, pgs. 2-3

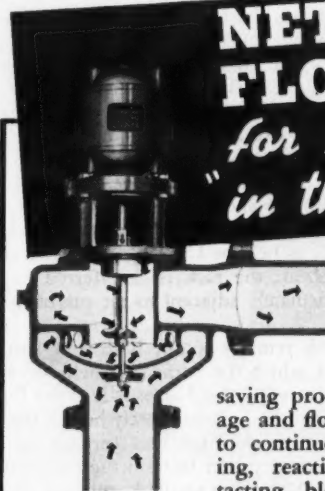
## Counting Scales in Single, Double, Triple and All-Ratio Models

Bulletin gives complete information concerning a wide variety of counting scales in many sizes and capacities including single, double, triple and all ratio models with weightograph, dial and beam indication. Among the eleven types of counting scales illustrated is a double-ratio scale with a special third pan said to be especially adapted for counting small parts because of the unusual high sensitivity provided by this third pan, which is attached to the lower beam lever. Fully automatic, this fan bench type scale makes possible quick, accurate counting and weighing of small parts in production, receiving, shipping and inventory operations. The special third pan has ratio to the high ratio pan that is equal to that of the low ratio pan to the platform. Copies of bulletin on request.

THE HOWE SCALE CO., Dept. CP, Rutland, Vt.

When inquiring specify CP A1263 — see information request blank, pgs. 2-3

**NETTCO  
FLOMIX**  
*for Mixing  
"in the Line"*



Designed for modern continuous process operations, Flomix combines materials in transit,

saving production time, tankage and floor space. Adapted to continuous mixing, blending, reacting, washing, contacting, bleaching, absorbing, chlorinating and clarifying — combines any materials that

will flow through piping. Sizes from 1" to 8" pipe capacities.

Write for Bulletin.

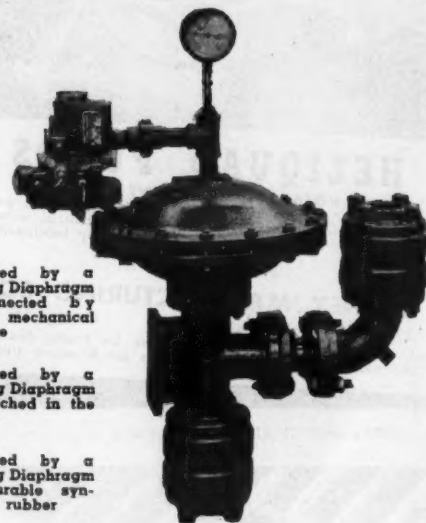
**NEW ENGLAND TANK & TOWER CO.**

93 Tileston Street

Everett 49, Massachusetts

When inquiring specify CP A1264 — see information request blank, pgs. 2-3

# OLIVER DIAPHRAGM PUMP



• Actuated by a Flexing Diaphragm unconnected by any mechanical linkage

• Actuated by a Flexing Diaphragm unpunched in the center

• Actuated by a Flexing Diaphragm of durable synthetic rubber

THE O-D-S Slurry Pump is a simple pump . . . just a durable diaphragm flexing under the impulse of compressed air or vacuum or a combination of both. Carefully selected and tested solenoid valves control these impulses, the timing of which is also under close control. Wear-resisting and corrosion-resisting ball check valves complete the assembly.

As for the types of products the O-D-S Pump is handling, these are typical: • caustic crystal salts • manganese, titanium and gypsum slurries with particles up to 1/8" • sink-float concentrates • ground cocoa bean shells and water • acetic and propionic acid plus wood oil at 145° C. • 60% hydrofluoric acid at 150° F. • calcium carbonate • clay and oil mixtures. •

The sizes of pumps range from 1 inch to 3 inches. Batteries can be used effectively to proportion different feeds.

**OLIVER  
UNITED FILTERS  
INC.**

New York 18, N. Y.  
33 West 42nd Street

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N. LaSalle Street

San Francisco 11  
California



Western Sales Division  
Oakland 1,  
Calif., 2900 Glascock  
Street

Canada: Sales & Manufacturing Representative  
E. Long Limited — Orillia, Canada  
Factories: Oakland, Calif. — Hazleton, Pa. — Orillia, Canada — Melbourne, Aus.

1-OUF-3

When inquiring specify CP A1265 — see information request blank, pgs. 2-3

# KINNEY



## HELIQUAD PUMPS

### ROTARY DISPLACEMENT TYPE

Whether pumping thin or viscous liquids, a smooth, positive displacement is accomplished by double helical rotors of unique design (as illustrated) synchronized by hardened steel timing gears.

Write for Bulletin 18.

### KINNEY MANUFACTURING CO.

3573 Washington Street

Boston 30, Mass.

Branch Offices: New York, Chicago, Philadelphia, Los Angeles, San Francisco  
We also manufacture Vacuum Pumps, Clutches and Bituminous Distributors.

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### NO OTHER GRATING LIKE IT!

Actually Blaw-Knox Grating is a one-piece, electroforged steel "material" which can be made to measure or cut to fit. Note these exclusive features:

1. Self-cleaning, no sharp corners to clog.
2. Maximum open area for light and air.
3. Easy to maintain... paint reaches entire surface.
4. Rigid electroforged construction means easy installation.
5. Twisted cross bar provides safe footing at all times.

Write for catalogue and sample.

## BLAW-KNOX ELECTROFORGED STEEL GRATING

BLAW-KNOX DIVISION of BLAW-KNOX COMPANY  
2076 FARMERS BANK BUILDING, PITTSBURGH, PA.

When inquiring specify CP A1267 — see information request blank, pgs. 2-3

## PRODUCTION

### Selective Copper Brazing for High Production of Parts

*Allows work to be completed in considerably less than full working day*

**Uses** — Selective copper brazing on high production basis. Instance cited here is use of equipment in connection with ordinance parts — copper brazing two small cheek plates to a length of 1050 steel.

**Features** — The high speed of brazing allows the work to be completed in considerably less than a full working day. Production speed of 600-700 per hour.

**Description** — The process employs electric salt bath furnaces which not only permits the selective heating of the parts to be brazed, but also eliminates decarburization, and has reduced scrap from 15% to a maximum of 3% as compared with conventional methods. The salt bath furnace method has also reduced distortion so that the amount of time and cost involved in straightening brazed work has become negligible. As a result, what was once considered a difficult, "tricky" job has now taken its place as a simple, foolproof production heat treating operation with results that are completely predictable.

The operation consists of copper brazing two small cheek plates to a length of 1050 steel. The plates, of approximately one inch square area and but  $\frac{1}{8}$  inch thickness, are first tack welded (by spot welder) to the sides of the strip, the copper shim being inserted prior to the welding. The parts are then placed in a rack which holds 20 pieces thereby affording easy manual handling.

Three standard electrically heated salt bath furnaces are employed: preheat, high heat and quench. The temperatures of the furnaces are controlled automatically to close limits with special timing controls. The control for the high heat furnace holds the temperature of the furnace at a constant level until work is to be treated. Then, a special heat measuring control on the instrument panel permits the operator to add exactly the required amount of heat for the exact pre-determined time. Thus, the operation is entirely automatic with temperatures and time being fully controlled.

The rack with work is first placed over the mouth of the preheat furnace so that the ends of the work, which are to be brazed, are immersed in the molten salt. The temperature of this furnace is held at 1550°F. When the work has had sufficient preheat, the rack is transferred to the high heat furnace immediately adjacent to the pre-heat furnace.

The time that the work remains in the high heat furnace and the temperature at which the furnace is held are both important. The temperature is held at exactly 2090°F and the time is exactly  $\frac{3}{4}$  minutes. Immediately before the operator transfers the parts to the high heat furnace, he sets the control to add sufficient power to hold the temperature of the salt at exactly 2090°F, for exactly  $\frac{3}{4}$  minutes. When he places the work in the high heat furnace, he touches a button on the control board which starts this cycle.

At the end of the time, the operator is signalled and the work is transferred to the quench.

The salt quench is one of the reasons for the outstanding success of the entire process. This salt quench checks the flow of copper immediately. It eliminates the tendency of the copper to run or blow or form a blob on the surface of the work. The work comes out of the salt quench clean and smooth excepting for a thin and unimportant coating of salt. Temperature of the quench, usually held at 1150°F is not critical, nor is it too important; it is only necessary that the quench be salt, since a water or oil

## COMMERCIAL STAMPINGS

### AND POST WAR PLANS

Here are ours

To continue to serve industry with our "Experience" in making stampings.

Twenty years "experience" in forming heavy gauge metals of all types. Steel, monel, brass, copper, aluminum and stainless steels.

If circular shapes are needed write us — as we have the largest number of circular dies in the United States.

Send for new Shape Book No. 6 and

let us have your inquiries.



## The COMMERCIAL SHEARING AND STAMPING CO.

YOUNGSTOWN 1, OHIO

When inquiring specify CP A1268 — see information request blank, pgs. 2-4

## IS YOUR PROBLEM ONE OF



Since handling of material is the principal operation in warehousing, the proper selection of handling equipment is of prime importance. Baker Trucks make four distinct contributions to warehousing efficiency: 1. They increase storage space by tiering. 2. They cut handling costs. 3. They speed movement of materials. 4. They do the work of 8 to 10 men.

If you have a material handling problem and are looking for the best answer, the Baker Material Handling Engineer nearest you will gladly help you. Or write direct.

Write for your copy of the new Baker catalog

Any executive concerned with material handling will find this book a valuable source of information. Write for your copy today.

BAKER INDUSTRIAL TRUCK DIVISION of the Baker Railing Co.  
2163 WEST 25th STREET • CLEVELAND, OHIO  
In Canada—Railway and Power Engineering Corporation, Ltd.

## Baker INDUSTRIAL TRUCKS

When inquiring specify CP A1269 — see information request blank, pgs. 2-4

CHEMICAL PREVIEW



## PRODUCTION

quench will invariably blow the copper out and form objectionable blobs on the surface.

After the quench, the work is re-hardened and straightened. Re-hardening is also a simple matter since the use of the salt bath prevented any noticeable decarburization that is usually present with conventional methods of brazing and which would necessitate a re-carburizing before re-hardening is possible. Work is re-heated to 1550°F immediately after the quenching so that it is hardened to the required 50 to 52 Rockwell.

An interesting feature of the process is that flux is not required, the salt itself acts as a flux.

The amount of straightening that is required is nominal due to the fact that only a small portion of the part is heated. Moreover, the temperature of the bath is controlled to such close limits that even though the entire part were immersed at the time of brazing, distortion would still be far less than with conventional methods.

The same equipment was also used for a time to braze the same parts but with brass instead of copper as the bonding medium. The time required was slightly less than that required for the copper brazing operation, but otherwise results were equally dependable.

Production speeds of brazing by this process, which employs these Electric Salt Bath Furnaces with the Upton Heat Measuring control yet without elaborate work handling conveying equipment is estimated at 600 to 700 per hour.

At the present time, the high speed of brazing allows the work to be completed in considerably less than a full working day. The balance of the time is devoted to straight commercial high speed and moly tool steel hardening. This work is being done interchangeably in the identical furnaces with the copper brazing.

UPTON ELECTRIC FURNACE DIV., Dept. CP, 7450 Melville Ave., Detroit, Mich.

When inquiring specify CP A1270 — see information request blank, pgs. 2-3

## Flexibility of Conveyor Systems Meet Problems of Packaging Changes

The timely subject of post-war conversion in the light of materials handling revisions and adaptations is given practical treatment in twenty-four page illustrated booklet. The advantages of carefully designed materials handling systems is emphasized in case histories showing how difficult jobs of converting plants to war production were performed. These examples illustrate how similar results are to be achieved in peacetime and also demonstrate the great adaptability and flexibility of properly engineered conveyor systems. Of particular interest is case history of bakery in planning new conveyor system for new plant covering some six and one-half acres of floor space. A system of conveyors was installed totaling 3200 feet. Raw materials are moved in from the receiving department through various processing machines, into the ovens, through packers and wax paper wrapping machines and finally to shipping department. Co-ordinated with the flow of goods is the flow of cartons. The variety of baked goods and the necessity to change style and size of package frequently did not impose difficult problem as the system was quickly adjustable to these changing needs. Copies of "Case Histories to Aid You In Blueprinting Conversion to Peace."

LAMSON CORP., Dept. CP, Syracuse 1, N. Y.

When inquiring specify CP A1271 — see information request blank, pgs. 2-3

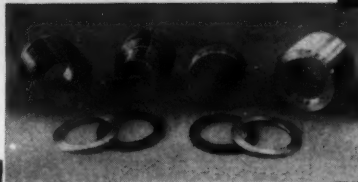
*Specifications*  
50,000 pounds working  
pressure per square inch

*Tested to*  
70,000 pounds  
per square inch

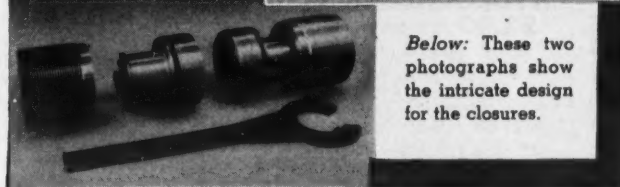
## AMERICA'S LARGEST HIGH PRESSURE Autoclave



Above: The 50,000 pound High Pressure Autoclave with the protective jacket removed.



Below: These two photographs show the intricate design for the closures.



*Informative  
Autoclave Bulletin  
on request*



Here is a typical example of the engineering "ingenuity" available at Struthers Wells:

"For years Struthers Wells have built laboratory Autoclaves suitable for working pressures up to 25,000 pounds per square inch, BUT, a production unit suitable for 50,000 pounds working pressure per square inch had never been built! However, this unit was vitally needed—in a hurry. The Struthers Wells engineering department burned midnight oil for many nights—the plans finally came off the drawing board—proper materials selected—forged and machined—in less than two months the machine was ready for testing—not at 50,000 pounds—BUT 70,000 pounds. The completed unit is now installed and working 24 hours a day in a very highly satisfactory manner, according to our customer."

This same advanced engineering and manufacturing facility is available to you, too!

**STRUTHERS WELLS  
CORPORATION**

SPECIAL EQUIPMENT DIVISION

TITUSVILLE, PENNA.

PLANTS AT TITUSVILLE AND WARREN, PA.

Offices in Principal Cities

When inquiring specify CP A1272 . . . see information request blank, pgs. 2-3



## KOCH OVENS FOR THE PROCESS INDUSTRIES

The process industries are using KOCH Ovens for testing, batch drying, dehydrating, baking and preheating . . . with universal success!

KOCH's controlled recirculation principle provides the dependable accuracy and reliability technicians need.

In addition to a complete line of standard ovens in a wide range of sizes, KOCH designs and constructs custom-built equipment to suit individual requirements.

GEORGE  
**KOCH** Industrial Equipment  
SONS, INC. ♦ 2119 W. OHIO ST., EVANSVILLE 4, IND.

When inquiring specify CP A1273 — see information request blank, pgs. 2-3

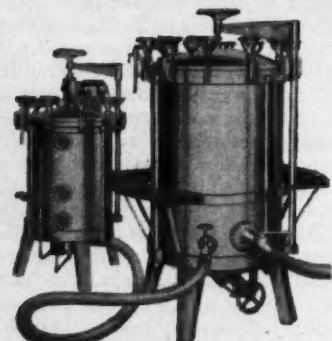
*What a Good Filter  
Should Have . . .*

**KLEIN** has!

SOME OF THE TIME-AND  
MONEY-  
SAVING  
Innovations in Filter Engineering  
Featured in the Improved

**KLEIN IDEAL  
DIATOMACEOUS  
EARTH FILTERS  
and FEEDERS**

- Exclusive Screen Grid Construction, for maximum gloss, uniform product.
- Uni-directional flow within the leaf.
- No internal wire mesh to trap solids. No turbulence. No clogging.
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- Automatic Filter-Aid Handling.
- Completely closed filter system.
- Special drain valve, Klein-designed and Klein-manufactured. Provides large opening.



Est.  
1909

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FILTER & MANUFACTURING CO.  
1225 School Street • Chicago 12, Ill.

Incorporated in the great Klein  
Filters and Feeders are many  
other important improvements  
over conventional filters. You  
should investigate them!

**WRITE TODAY FOR  
FULL INFORMATION!**

When inquiring specify CP A1274 — see information request blank, pgs. 2-3

## PRODUCTION

### Red Toners For Fiery Brilliance

*For use in paint industry in interior and exterior enamels for signs and equipment*

**Uses** — By paint industry in manufacture of brilliant interior and exterior enamels, including finishes for such products as signs, advertising signs, gas pumps, fire apparatus, etc.

**Description** — Available standards Calco "Permaton" Red Toners — 20-7018, 20-7022, 20-7024, 20-7028.

AMERICAN CYANAMID CO., (Calco Div.), Newark 3, N. J.

When inquiring specify CP A1275 — see information request blank, pgs. 2-3

### Venturi-Type Safety Valve

*Special separator bell causes steam to make three changes in direction before passing into atmosphere*

**Uses** — These Venturi-Type safety valves have special provisions for constant accurate blow-off.

**Features** — Exceptionally great capacity, complete tightness for reseating, minimum escape of vapor into the surrounding space, and elimination of angular distortion and fouling.

**Description** — The inlet venturi tube nozzle of this design gives a clear, unobstructed port and guided high velocity of the steam, which results in high lift and correspondingly great capacity. One of the many outstanding features of these valves is the special separator bell. This device



**6 YEARS Throttling . .  
HYDROCHLORIC ACID!  
\$3.00 repair parts**

FOUR new diaphragms represented the only maintenance on the valve illustrated during six years service in throttling position on 22" Be. hydrochloric acid. Whenever you encounter severe operating conditions Hills-McCanna Diaphragm Valves are the answer. Absolutely leakproof; won't clog or stick; low pressure drop; working parts isolated from flow; no packing to replace. Write today for CATALOG. HILLS-McCANN COMPANY, 2370 W. Nelson St., Chicago 18, Ill.

**HILLS-McCANN Diaphragm VALVES**  
SAUNDERS PATENT

Proportioning Pumps — Force-Feed Lubricators — Chemical Valves  
Air & Water Valves — Marine Valves — Magnesium Castings

When inquiring specify CP A1276 — see information request blank, pgs. 2-3

WHEN BETTER METALS ARE MADE — GROEN WILL USE THEM



**IT'S A  
GROEN  
MIXER TYPE  
KETTLE**

**FAVORITE OF LEADING CHEMICAL PLANTS**

Expertly designed and engineered for consistent performance. Stainless Steel construction. 30 or double-motion motor driven agitators. Motor gear reducers fully enclosed, mounted on channel across top. A long-lived, dependable. For details write our Priority Division to GROEN MFG. CO., 4535 W. ARMITAGE AVE., CHICAGO 38, ILL.

**WORLD'S LARGEST PRODUCERS OF  
STAINLESS STEEL STEAM JACKETED KETTLES**

When inquiring specify CP A1277 — see information request blank, pgs. 2-3

**BETTER  
PROTECTION  
"In the Palm  
of His Hand"**



\*Lan-O-Kleen is helping to combat industrial skin diseases in many great plants from coast to coast.

It is a powdered soap compounded with granular corn-meal and impregnated with Lanolin.

**FREE Literature and Samples on request. Write today.**

\*Reg. U. S. Pat. Off.

**WEST** DISINFECTING  
company

42 16 WEST ST. • LONG ISLAND CITY 1 • N. Y. • DEPT. C.P.

When inquiring specify CP A1278 — see information request blank, pgs. 2-3



## PRODUCTION

uses the steam to make three changes in direction before passing into the atmosphere, and includes a drain for the condensed moisture into the body. Escape of vapor into the air is thereby minimized. The separator bell also helps to keep the spring cool by preventing steam from striking the spring, and improves freedom and maintenance of alignment by providing for higher support of the spring than is general in most designs. Correct alignment of the stem, on which complete tightness of re-seating depends, is further maintained by precision machine work throughout the valve, and by top guidance of the stem in two bearings, instead of one or three. The two bearing construction eliminates angular distortion, minimizes fouling of guiding areas, and provides maximum ease of maintenance and accuracy of re-seating. Further details on request.

HARRIS ENGINEERING CO., Dept. CP, Palisades Park, N. J.

When inquiring specify CP A1279 — see information request blank, pgs. 2-3

### Control and Testing Instruments for Plant & Laboratory

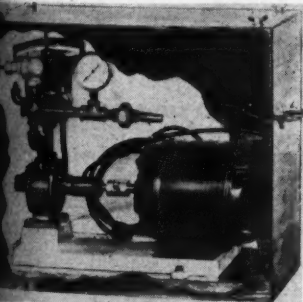
A recent issue of instrument manufacturer's publication fully described as its "general catalog" number briefly describes all the organization's products for regulating plant processes. Indicating and recording controllers for temperature, direct reading recorders for humidity; power plant instruments and testing and checking instruments for plant and laboratory such as pH indicators and similar equipment. Copies of Folder ENT(7a) on request.

REEDS & NORTHRUP CO., Dept. CP, 4934 Stenton Ave., Philadelphia 44, Pa.

When inquiring specify CP A1280 — see information request blank, pgs. 2-3

### Portable Air or Gas Test Units

*For various purposes for which air or non-corrosive gas may be required*



AIR-GAS TEST UNIT

**Performance** — Units will handle from 1 up to perhaps 5 cubic feet of air and at a pressure up to 10 lbs. or 20 inches mercury vacuum.

**Description** — Units may be equipped with interchangeable motors for various currents and while some are direct connected to motor shaft, others are operated with equally restricted drives in the form of v belts and grooved pulleys. Carrying case is supplied and there are means of controlling the flow of air to or from the pump and at the same time controlling the degree of pressure or vacuum. Information regarding application of these units to individual requirements on request.

LEIMAN BROS., INC., Dept. CP, 139-77 Christie St., Newark 5, N. J.

When inquiring specify CP A1281 — see information request blank, pgs. 2-3

## IF YOUR NAME ISN'T HERE...

**W**HEN you check through the list of long-time, thoroughly satisfied users, it can't be that you think your business is so "different" that WILSON Pulsafeeders will not handle your chemical proportioning and metered flows of liquids, with equal satisfaction and economy.

Our guess is that we haven't had opportunity to present the facts. May we have that opportunity now in person or by mail? If you have a problem that WILSON Pulsafeeders will solve, or a process in which they will serve with greater accuracy, dependability and economy, we'll both be losers until these amazing proportioning pumps go to work in your plant.

**Accuracy of Wilson Pulsafeeders is guaranteed in most instances at better than  $\frac{1}{2}$  of 1%. Capacity ranges from 1 cph. to 600 gph. Almost any power source suffices. Control may be manual or automatic (at unit or remote), flow may be mono or multiple. They serve magnificently in chemical proportioning, food and other processing, in laboratories, water and sewage treatment, etc. They are so flexible, they are adaptable to almost any purpose and our Engineering Service is experienced, cooperative and competent.**

An outstanding superiority of WILSON Pulsafeeders is their freedom from leak-likely packing glands and breakable diaphragms. Sketches "A" and "B" show isolation of load liquids from working parts and the scheme of shape-changing of the flexible diaphragm against inert liquid as the piston advances. Possibility of rupture is obviated.



Suction Position



Discharge Position

Tell us your requirements and we will send pertinent details NOW.

# WILSON

## CHEMICAL FEEDERS, Inc.

207 CLINTON STREET (P. O. Box 998) BUFFALO 4, N. Y.

EST. 1923... WITH EXPERIENCE IN ALLIED LINES SINCE 1914

When inquiring specify CP A1282 . . . see information request blank, pgs. 2-3

## Let Your Process Benefit by These ADVANTAGES of SHRIVER FILTER PRESSES

- 1—Filtering capacity at lowest cost per square foot of filtering area.
- 2—Easy to operate and maintain.
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- 9—Any capacity from the smallest laboratory unit to any plant scale size.



**New catalog  
No. 45 tells the  
whole story.  
Write.**

Corner feed, steam heated,  
washing type, closed delivery filter press.

**T. SHRIVER & COMPANY, Inc.**

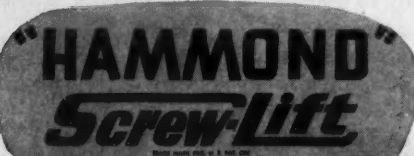
846 Hamilton St. - Harrison, N. J.



When inquiring specify CP A1283 — see information request blank, pgs. 2-3

## TO HANDLE BULK MATERIALS

*Here's the Answer -*



**V  
E  
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T  
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C  
A  
L  
L  
Y**

The Only Successful Vertical Conveyor For Any Practical Height.

They'll handle any free-flowing bulk material smoothly — quietly — efficiently.

**Outstanding Advantages**  
Dust-Tight — Moisture-proof. Compact — requires little space — simple to install. Flexible — accessible. Eliminates accident and fire hazard.

We produce Screw-Lifts in five types and four sizes, 75-300-1000 and 2500 cu. feet per hour — with top or bottom drives and with any feeding or spouting arrangement. Tell us your problem and ask for Form M-500-2.



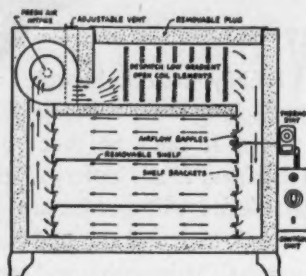
**Screw Conveyor Corporation**  
899 HOFFMAN ST. HAMMOND, IND.  
ENGINEERS MANUFACTURERS  
TRADE MARK REG. U.S. PAT. OFFICE

When inquiring specify CP A1284 — see information request blank, pgs. 2-3

## PRODUCTION

### Fast Heating Ovens With Forced Convection Systems Cut Mold Time

*In choice of models for plastic preheating and other service such as testing, drying etc.*



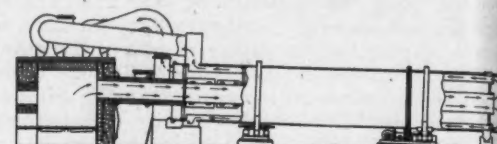
OVEN has forced convection heating

**Description** — Heavy gauge metal, inside and out. Three inch rockwool insulation packed between walls of oven body and doors. Snug fitting doors, asbestos seal easily replaceable. Low gradient heating elements are of open design. Vertically mounted on rugged frames, they reduce residual heat, accelerate pre-heating. Steel mesh provides free circulation through load. Ovens now in operation have contributed to cutting down molding time with considerable savings in production costs. The ovens are

**Uses** — For heating, drying, baking, testing; widely used in plastic preheating (see cover illustration).

**Features** — Thermostat sensitive within 1 C controls heat throughout temperature range. Fast heating of these ovens permit one unit to service several operators. Powerful high velocity fan is all welded; no rivets.

## "RUGGLES-COLES" Rotary Dryers



**Class "XA" Double Shell Direct Heat.**

**Class "XB" Double Shell Indirect Heat.**

**Class "XC" Steam Tube Type.**

**Class "XF" Single Shell Direct Heat.**

**Class "XW" Single Shell Hot Air Passing Over Steam Coils.**

**Four Other Types Available.**

**HARDINGE**  
COMPANY, INCORPORATED - YORK, PENNSYLVANIA  
NEW YORK, CHICAGO, SAN FRANCISCO, TORONTO

When inquiring specify CP A1286 — see information request blank, pgs. 2-3

## HENDRICK MITCO



**OPEN  
STEEL  
FLOORING**

*Pressure-Formed  
For More Efficient Performance!*

No rivets or bolts to fail in Hendrick Mitco Open Steel Flooring! Free from residual stresses, too, as this long service flooring does not depend on locking devices or welding! Hundreds of tons of hydraulic pressure are used to force square-edged steel cross bars into bearing bars of metal completely fills the dovetails, forming integral unit. Maximum light and ventilation afforded by 90% open area! Non clogging and non-slipping, Mitco Open Steel Flooring provides level surface and correctly-spaced openings for safe walking — and easy riding of trucks. Full information upon request.

**HENDRICK MANUFACTURING COMPANY**

Carbondale, Penna.

30 Church Street, New York City

Sales Offices in Principal Cities

Also manufacturers of Perforated Metal Screens, Perforated Metal Grilles,  
Light and Heavy Steel Plate Construction

When inquiring specify CP A1287 — see information request blank, pgs. 2-3



*At SPROUT, WALDRON  
You Can Match the  
Mixer to Your Mix*

Illustrated, for example, is a highly efficient type for all dry, free-flowing materials. It is self-contained, compact, economical of power and extremely so of labor.

From the unusually broad line of SPROUT, WALDRON MIXERS—horizontal, vertical, batch and continuous—each in a complete range of sizes—you can select the best type for your process.

Outline your problem if its solution is urgent and write or wire for appointment. Or if it is not immediate, send for Bulletin — a brief, comprehensive outline of equipment for food and process industries.

**SW**  
**SPROUT, WALDRON & COMPANY**  
155 SHERMAN ST. MUNCY, PENNA.  
Manufacturing Engineers Since 1866

When inquiring specify CP A1285 — see information request blank, pgs. 2-3



## PRODUCTION

available in a number of styles for specific laboratory and production operation. Those for plastic service include units for preheating phonograph "biscuits," and similar plastic materials that require a large flat surface during preheating. Literature on request.  
DESPATCH OVEN CO., Dept. CP, Minneapolis 14, Minn.

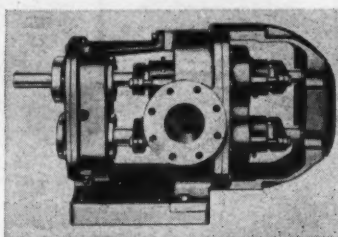
When inquiring specify CP A1288 — see information request blank, pgs. 2-3

### Heavy-Duty Industrial Pump

Capacity of 100 gal. per 100 revolutions; ball bearings in both face plate and rear gear case

Uses — For heavy duty positive handling of liquids.

Features — Operating speeds that range from zero to four hundred R. P. M. and a capacity of one hundred gallons per one hundred revolutions. Made with ball bearings in



PUMP . . 0-400 rpm

both face plate and rear gear case, this heavy duty industrial pump can be furnished either with flanged or threaded intake and discharge ports. Due to its heavy construction, maintenance costs are held to a minimum.

Description — The pump can be made of iron, bronze, nickel alloy, stainless steel, or other metals, and can be furnished in direct, v-belt or pulley drive. Complete details on request.

BUMP PUMP CO., Dept. CP, La Crosse, Wis.

When inquiring specify CP A1289 — see information request blank, pgs. 2-3

### Acoustic Telephone Booths For Noisy Industrial Plant Areas

Doorless design for ventilation and convenience; in plywood and metal construction models



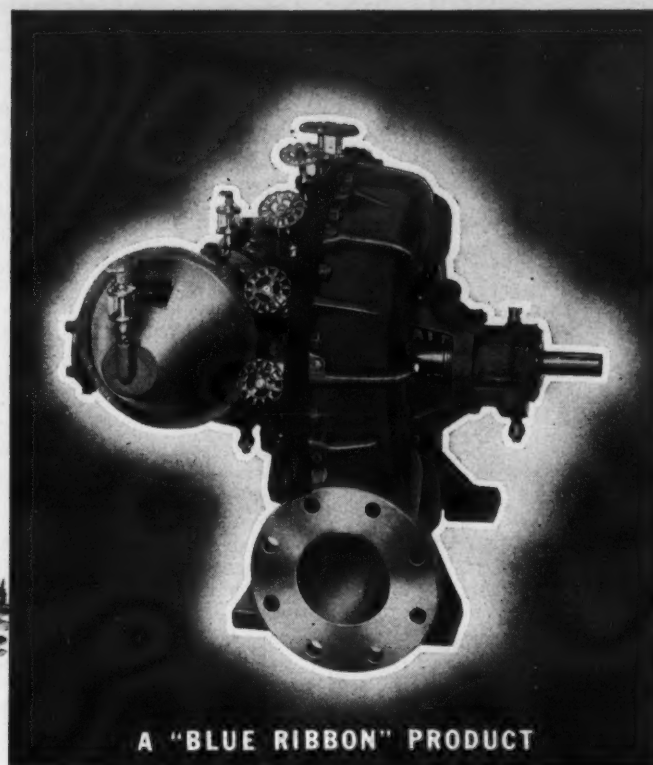
Uses — To provide a "zone of quiet" for industrial telephones so that incoming messages can be heard clearly and voice transmission improved through reduced level of noise reaching mouthpiece.

Features — Booth is doorless, airy and can be easily moved if necessary.

Description — Industrial model (No. 211) is constructed of heavy gauge steel throughout. The inside is finished in steel gray; outside in black. Steel instrument shelf is 24 x 8 inches. Fixture in ceiling and switch provides for light. Open base provides easy cleaning. The noise absorbing material is between two metal panels. Another model (No. 207) illustrated here is of similar design but of paneled plywood construction. Outside dimensions: 31 in. wide, 79½ inches high, 38½ inches deep. Literature on request.

BURGESS-MANNING COMPANY, Dept. CP, 2817 Roscoe St., Chicago, Ill.

When inquiring specify CP A1290 — see information request blank, pgs. 2-3



A "BLUE RIBBON" PRODUCT

## THEY CALL 'EM JEEPS

BECAUSE THEY'RE SMALL, BUT POWERFUL, AND GO ANYWHERE

For a small, tough, hard-working turbine that will go anywhere and do all you expect of it . . . get a Coppus "Blue Ribbon" Steam Turbine.

Coppus Steam Turbines come in six frame sizes from 150 HP down to fractional—so you can match more closely your job requirements. Each smaller size is priced correspondingly less, so by selecting "horsepower" instead of "elephant power" you save on investment and installation cost.

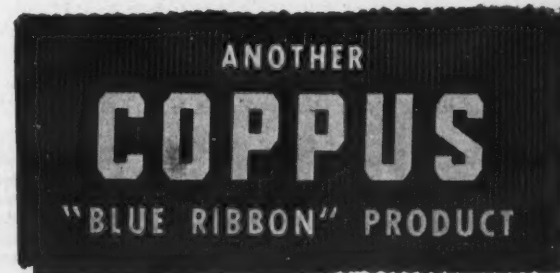
Many well-known manufacturers install Coppus "Blue Ribbon" Steam Turbines on original equipment. They know Coppus quality will protect the reputation of their own products. The Coppus Turbine is also being used

on many U. S. Destroyer Escorts, all Casablanca class aircraft carriers and 90% of all Landing Ship Docks.

Like all Coppus "Blue Ribbon" products (blowers, ventilators, gas burners, etc.), the Coppus Steam Turbine is a precision-made product, with accuracy controlled by Johansson size blocks. Every turbine is dynamometer-tested before shipment.

More than 85% of all orders since 1937 have been repeat orders.

Write for Bulletin 135-9. Coppus Engineering Corporation, 241, Park Avenue, Worcester 2, Mass. Sales offices in THOMAS' REGISTER. Other Coppus "Blue Ribbon" Products in SWEET'S, CHEMICAL ENGINEERING CATALOG, REFINERY CATALOG.



When inquiring specify CP A1291 . . . see information request blank, pgs. 2-3



## How this Manual Helps You NOW

For maintenance managers facing problems of rehabilitating war-weary piping systems, here is timely aid. Prepared as a practical textbook for maintenance trainees, and a refresher course for veteran workers, this "Piping Pointers" manual provides the basic "know-how" for keeping piping systems at peak efficiency.

### HOW TO USE "PIPING POINTERS" BEST

Maintenance men returning from war service—men transferred from production lines back to piping crews—new workers—all will do a better job by reviewing the authentic fundamentals on piping installation and care in "Piping Pointers." The entire content is based on Crane Co.'s 89-year experience and leadership in the piping equipment field.

### GET YOUR COPY NOW—NO OBLIGATION

"Piping Pointers" manuals are available for all users of piping. Ask your Crane Representative for a copy or write to address below. Quantity requests will be filled while present supply lasts. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill. Branches and Wholesalers Serving All Industrial Areas.

For Anything In Piping Materials—Call CRANE!

# CRANE

VALVES • FITTINGS • PIPE • PLUMBING • HEATING • PUMPS

When inquiring specify CP A1203 — see information request blank, pgs. 2-3

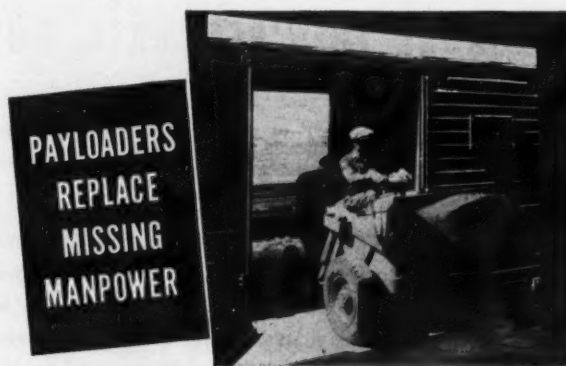
## PRODUCTION

### Thermostats for Electric Devices In Limits Minus 120° F. and 600° F.

Four page bulletin features actual size photograph of a thermostat for control of electric devices between temperatures of minus 120 and 600° F.; conveniently tabulates specifications and discusses standard and specialized applications. The various models cover calibrated scales of 300° F. or 500° F. between the limits previously stated. These units have approximate differential of .5 F. to 1° F. in liquids, sub-zero testing cabinets and mechanical convection ovens and 2° F. in gravity type ovens. They are compensated accurately for wide ambient temperature changes, are simple in design, contain no delicate mechanisms and can withstand vibration, shock and moisture conditions. A simple calibration correction is provided. Effective ambient temperature compensation permits use of a most precise type of wide range temperature responsive device, the solidly liquid filled bellows, bulb and tube assembly. Positioning the switch with a micrometer allows a fine adjustment, because the wide range is covered in several turns of the adjusting knob. The bellows motion being that of liquid expansion and contraction, is consequently unvarying for every degree of range. The micrometer adjustment being equally precise, and having the same movement per degree, covers a uniform amount of range for each complete turn. Readings and dividers are equally spaced and settings are made quickly to the precise degree desired. Calibration is uniform in the Fahrenheit scale with equivalent Centigrade readings. Bulletin 441 T on request.

UNITED ELECTRIC CONTROLS CO., Dept. CP, 69 A St., Boston 27, Mass.

When inquiring specify CP A1293 — see information request blank, pgs. 2-3



Why worry about the men who are not to be had? In many process plants, the manpower problem for handling bulk materials has been eliminated with Hough Payloaders. These compact, readily-maneuverable units speedily pick up their loads, hoist them and carry them to nearby or distant points and dump them into trucks, bins or pits. The Model "HA" Payloader, pictured, will load, carry 100' and dump at the rate of 25 tons or more per hour. Note how easily this unit goes in and out of box cars, where it is a great time saver. Numbers of Payloaders are used by DuPont, Johns-Manville, Virginia-Carolina and the General Chemical Company for handling bulk materials. Ask for Bulletin 149.

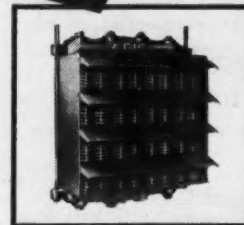


THE FRANK G. HOUGH CO.  
Libertyville, Illinois  
"Since 1920"

## HOUGH Payloader SHOVELS

When inquiring specify CP A1294 — see information request blank, pgs. 2-3

## The UNIT HEATER that will STAND CORROSIVE ATMOSPHERES...



In chemical plants all over the country the GRID Unit Heaters have been in operation for 10, 12, and more years, there is the same report — all operating efficiently without maintenance. As one plant reports, "We have in our plant 20 GRID Unit Heaters that were installed in 1931 and still they have required no maintenance and have been eminently satisfactory. As to the chemical conditions in and around our plant other than cast iron heating construction has not served our purpose."

HERE'S WHY —

\*One piece construction heating sections (patented) of high test cast iron that withstand steam pressure up to 250 lbs.

\*No soldered, brazed, welded or expanded connections to become loose or develop leaks.

\*No electrolysis to cause corrosion, breakdowns, leaks, or heating failures.

**BLAST SECTIONS** The same high efficiency and lasting qualities as GRID Unit Heaters... one piece construction "fin" sections of high test cast iron... no tortuous air passages... complete absence of ruptures, strains, and warping. Guaranteed for steam pressures up to 250 lbs. Complete information upon request.

**GRID**

D. J. MURRAY MANUFACTURING CO., WAUSAU, WISCONSIN  
OFFICES IN ALL PRINCIPAL CITIES

When inquiring specify CP A1295 — see information request blank, pgs. 2-3

## CUT LABOR COSTS

*two thirds*



### with the NEW SPERRY EHC CLOSING DEVICE

This completely enclosed, electric-hydraulic unit provides a positive and precise means of opening and closing the filter press.

One inexperienced girl can easily operate it... filter room labor which generally requires three strong men.

Simple to operate... adjustments at only two points for complete control. The hydraulic medium is oil operating in a closed circuit. Powered by electricity... you plug into an electric outlet and production begins.

The EHC Closing Device offers an inexpensive and practical means of speeding filtering cycles and reduces hazards and labor costs. Write today for complete information.

D. R. SPERRY & COMPANY • BATAVIA, ILLINOIS

Filtration Engineers for Over 46 Years

EASTERN SALES REPRESENTATIVE

Henry E. Jacoby, M. E.

205 E. 42nd St., New York 17

Phone: MUrray Hill 4-3581



WESTERN SALES REPRESENTATIVE

B. M. Pilgashy

Merchants Exchange Bldg.

San Francisco 4, California

Phone: DO 0375

When inquiring specify CP A1296 — see information request blank, pgs. 2-3



## PRODUCTION

### Borescopes for Visual Inspection Of Internal Surfaces

*No adjustment other than focusing eye-piece  
required to put instrument in operation*

**Uses** — For inspection of internal surfaces: glass plates, tubes, engine parts, cylinders, machine shop applications.  
**Features** — The entire system of the borescope is highly corrected for chromatism and maximum definition in order to eliminate eye-strain and fatigue which may otherwise result from continuous inspection of large areas for minute details. No other adjustment than focusing the eye-piece is required to put borescope in operating condition. The eye-piece is adjustable to individual eyesight and varying work piece diameters.

**Description** — A tilted mirror placed in front of the objective furnishes a perpendicular view. This mirror is made from stellite and can be directed toward any surface element to be subjected to close scrutiny. The objective image is carried through the instrument tube by several sets of intermediate anachromats, the number of which depends upon the length of the borescope. The light source is built into the head of the borescope. The tubular bulb, used for smooth and evenly distributed illumination of the entire field, is concealed from the eyes of the observer by the mirror located in front of it. Shorter borescopes which are furnished in one unit are wired internally with the cord connector located conveniently next to the eye piece. The light of these borescopes is operated on low voltage and a 115 volt AC transformer is furnished as standard equipment. Borescopes from six to thirty feet which are furnished in separable units are operated on 115 volts with the cord connecting directly to the lighting attachment. Eye-pieces and larger lighting heads are detachable from the borescope body which is made from strong and seamless steel tubing. The strong joints for connecting separable units have bayonet lock. It is desirable sometimes to determine the longitudinal and angular location of internal surface faults. In such cases, the borescope may be equipped with an inch graduation along the tubes and with a clock dial at the eye-piece end. A right-angle borescope is used for internal wall inspection of short bores — 1½ in. minimum diameter by 12 in. maximum length. The long eye-piece extension makes possible the convenient use of the instrument where parts are to be inspected directly on machines which obstruct direct viewing. Bulletin containing detailed information, complete specifications of all models and sectional views of these borescopes available on request.

POLAN INDUSTRIES, (Zenith Optical Co.-Div.), Huntington, W. Va.

When inquiring specify CP A1297 — see information request blank, pgs. 2-3

### Commercial Resins In Emulsion, Dispersion And Solution Form

Brochure presents developments of the past few years in uses of resin colloids, particularly of resins emulsified or dispersed in aqueous media or dissolved in organic solvents. The text contains a brief discussion of the theory of emulsions, dispersions and solutions; a compilation of uses selected from patent literature and the company's practical experience; and finally, specific information regarding the various available resin colloids. A description of each of the several major fields of utilization is included.

AMERICAN RESINOUS CHEMICALS CORP., Dept. CP, Peabody, Mass.

When inquiring specify CP A1298 — see information request blank, pgs. 2-3

# Freedom of Movement

**PLUS Protection Against Oils, Acids,  
Chemicals, Water, Dust and Fumes**



Designed for positive protection and styled for supreme comfort . . . the miracle fabric, plastic coated PLY-GARB, sets new high standards for security and satisfaction, new low records for cost. Available in every type of safety garment for men and women, small, medium and large sizes . . . in regular and double-duty weights. **Immediate Delivery!**

Ply-Garb  
Overalls

## PLY-GARB

**Aprons and  
Sleeves**

Sleeves are designed with adjustable snaps or tailored-in arm-bands, air vents. No strain or binding.

Aprons are cut to full length. Adjustable shoulder and waist ties for personalized fitting.

**CUSTOM-DESIGNED CLOTHING FOR SPECIAL  
REQUIREMENTS.**

WRITE FOR  
LATEST  
PLY-GARB  
CATALOG

## THE MILBURN COMPANY

3246 E. WOODBRIDGE  
DETROIT 7, MICHIGAN

When inquiring specify CP A1299 . . . see information request blank, pgs. 2-3

*You can use this improved Romec Pump if...*



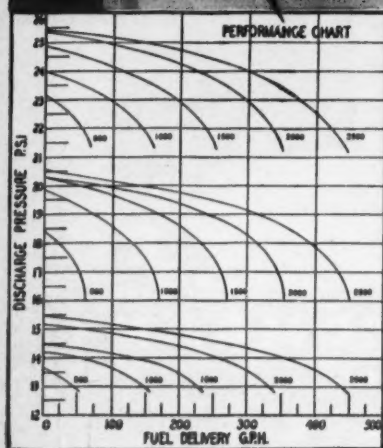
**CAPACITY**

400 gal. per hr. at 2500 rpm.

6 to 35 lbs. pressure  
per sq. in.

Weight only 2½ lbs.

Balance type relief valve  
with shaft seals.



If you can use higher fluid pressure you can save time. This pump has a capacity of 400 gal. per hr. at 2500 rpm. Suppose you save only 2 man-hours a day per pump; that means a saving of from \$40 to \$60 a month.

Higher pressure range may also help you. This G-9 runs from 6 to 35 lbs. per square inch. Furthermore it weighs less — only 2½ lbs. Its balanced type relief valve with shaft seals are dependable through extreme ranges of temperature. A precision built pump noted for its unfailing dependability, but only one of many in the ROMEc line. In writing kindly tell us about your requirements so we can advise you on the model best suited to your needs.

**ROMECPUMP COMPANY**  
102 ABBEY ROAD  
ELYRIA, OHIO, U. S. A.

**Romec**  
NON-PULSATING  
PUMPS... ACCESSORIES

**PRODUCTION**

**Multi-Rectifier-Six Selenium  
Sections for 4 DC Range**

*Range of control in 49 steps from zero to maximum in any range*

**Uses** — For research and development laboratories. Provides four ranges of DC power: — 0-8 volts, maximum capacity 100 amperes, 0-16 volts, maximum capacity 50 amperes, 0-24 volts, maximum capacity 35 amperes, 0-40 volts, maximum capacity 18 amperes.

**Features** — On each side of the cabinet of this multi-rectifier, wing nut terminals are duplicated for convenience in connecting loads. The section binding posts for interconnection are externally located on the right side only. Three phase magnetic contactor in the main power supply circuit with an On-Off push buttons, pilot lamp, Monitor lamp, buzzer (overload warning) and automatic provision for current interruption in case of a prolonged overload.

**Description** — The single unit incorporates six selenium rectifier sections which may be interconnected by external links. It is possible for the two panel-mounted voltage control switches to provide a range of control in 49 steps from zero to maximum, on any range. The built-in voltmeter and ammeter indicate the DC output voltage and current at all times, and red line calibrations indicate the maximum current limitations of each range. The multi-rectifier is available for operation from 220-440 volts at as specified at 60 cycles.

GREEN ELECTRIC CO., Dept. CP, 130 Cedar St., New York 6, N. Y.

When Inquiring specify CP A1301 — see information request blank, pgs. 2-3

**Moisture Detector for Lumber,  
Wood & Construction Materials**

*Covers range of 7 to 25% moisture; accuracy plus or minus 1%*

**Uses** — For lumber, wood products and various construction materials.

**Features** — Instant readings from 7-25%. Skilled operators not required. Measures hardest woods; accurate within 1%; conveniently portable.

**Description** — Operating on batteries, the instrument can be used anywhere. It weighs only six pounds and is provided with a sturdy carrying case. Electrode needle penetrates surface without marring material. Reading is taken by simply turning dial knob until a small light above the dial flashes at the correct moisture content.

COLLOID EQUIPMENT CO., Dept. CP, 50 Church St., New York 7, N. Y.

When Inquiring specify CP A1302 — see information request blank, pgs. 2-3

**Radio & Electronics Guide Book**

Radio and electronic guide book in handy pocket size, just recently issued, provides a comprehensive list of important radio and electronics books in an arrangement that permits finding any particular book listing in a moment. The titles were chosen after an extensive survey of many texts and cover every field from simplest fundamentals to the most advanced engineering principles. The listings are divided into two major parts: the first is a classified directory in which the books have been grouped according to subject matter, the second is a grouping under publisher's name and includes a brief summary of the contents. Copies of the guide book are available upon request.

ALLIED RADIO CORP., Dept. CP, 833 W. Jackson Blvd., Chicago, Ill.

When Inquiring specify CP A1303 — see information request blank, pgs. 2-3

When Inquiring specify CP A1300 . . . see information request blank, pgs. 2-3



## PRODUCTION

### Centrifugals With Continuous Feed, Discharge of Product

*Rapid, thorough separation; slurries totally enclosed at all times*

**Uses** — Primarily to handle solids in liquid suspension such as: (1) Separating solids from slurries and pulps, where either the solids or the fluids may be the values to be recovered, such as in the case of crystal recovery for solid values of the recovery of beet juice from pulp in the beet sugar process; (2) Classifying by type of solid — two solids having different settling characteristics such as starch and gluten separation in the wet starch process; (3) Classifying solids by size such as the separation of sand and cuttings from rotary drilling mud. Their function is to concentrate the solids, which are continuously discharged in the form of thickened pulp, and at the same time discharging the suspended medium. (Solids discharged from the centrifugal system while still in liquid suspension are sufficiently concentrated to make dewatering a simple operation.)

**Features** — Operate with a continuous feed and discharge of the separated products. As the solids are concentrated in the centrifugal rotor, they are washed, counter-currently and carried out of the machine in fresh liquor. Due to the high gravity effects developed, separation is rapid and thorough. The material is totally enclosed at all times and is therefore subject to a minimum of atmospheric contamination. In many cases, such as organic slurries, time-exposure factor is most vital.

**Description** — Continuous separation is accomplished by discharging the concentrate through nozzles at the periphery of the bowl, and then returning a major part of this underflow back into the bowl at the zone of discharge. This action creates turbulence at the periphery of the rotor which maintains the solids in suspension. At the same time it serves automatically to build up the density of the concentrates to any desired degree so long as it flows. Result is large through-put capacity and no quantity of material is in the separator more than a few seconds. Cleaning the concentrates is accomplished by adding wash liquor to the concentrates as they enter the bowl. If the wash is limited to the exact amount of liquid required to carry the solids out of the system, the original carrying liquid in the underflow will be displaced by the wash. If more wash than that required to carry out the liquids is introduced, the excess will flow inwardly to overflow discharge weir against the settlement of solids in the bowl. This effects the counter-current washing of the solids. These "Merco" centrifugals are of the suspended bowl type. From a full floating bearing depends the shaft which carries the rotor. The bearing is designed to permit the rotor assembly to gyrate within narrow limits, as well as to rotate. Oil is pumped to all frictional surfaces by the bearing arrangement. The return system operates automatically by means of the energy in the material discharged from the nozzles. The massive rotor is statically and dynamically balanced to exact standards to avoid the slightest vibration. Bulletin Number 501 contains complete specifications of all models together with photographs and drawing showing operating sequence. There are also views of installations and flow sheets and discussion of several different separation problems.

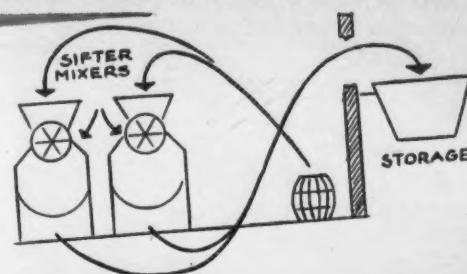
MERCO CENTRIFUGAL CO., Dept. CP, Hobart Bldg., San Francisco, Calif.

When inquiring specify CP A1304 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1945

### Two Way Problem —

- ① Feeding accurately proportioned volumes of various chemicals to two sifter mixers
- ② Keeping chemicals absolutely free from contamination during conveying



HERE'S HOW  
**S-A**  
ENGINEERS

*Solved It!*

Showing REDLERS feeding various chemical ingredients into battery of two sifter-mixer machines. Note the versatility of shape and compactness of the vertical closed-circuit system made possible by REDLERS.

● When it comes to handling chemicals intended for exact formulas, there can be no mistakes! That's why S-A engineers recommended REDLER Conveyor-Elevators for the operation shown here.

Because the REDLER serves as an accurate proportioning feeder, it is used to feed measured volumes of various chemical ingredients,

maintaining exact proportions of each. The REDLER self-cleaning feature prevents particles from remaining in the conveyor to adulterate succeeding mixes and their sealed, dust-tight casings keep materials absolutely free of contamination.

Full information on similar systems adapted to your operations is available on request.

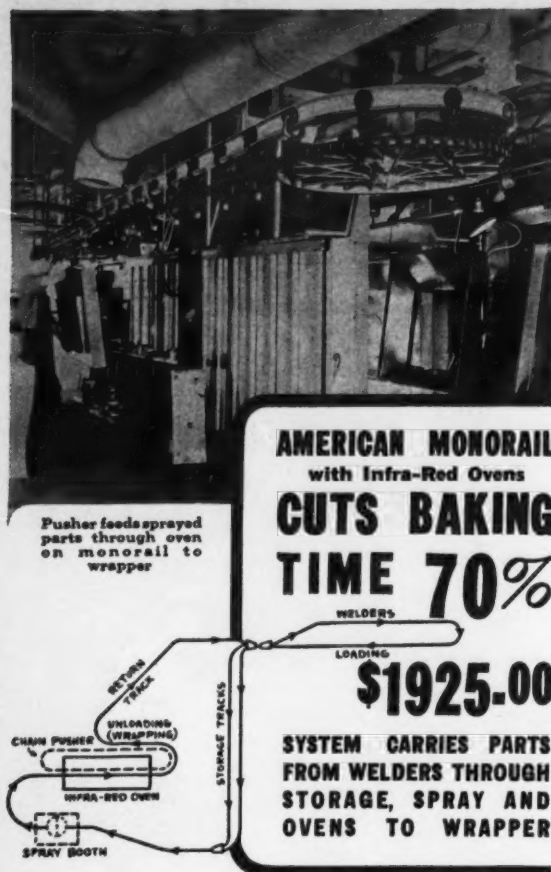
**STEPHEN S-ADAMSON**

11 RIDGEWAY AVENUE, AURORA, ILLINOIS MFG. CO. LOS ANGELES, CALIF. ★ BELLEVILLE, ONT.

*Designers and Manufacturers of All Types of*

**BULK MATERIAL HANDLING EQUIPMENT**

When inquiring specify CP A1305 . . . see information request blank, pgs. 2-3



Pusher feeds sprayed parts through oven on monorail to wrapper

**AMERICAN MONORAIL**  
with Infra-Red Ovens

**CUTS BAKING TIME 70%**

**\$1925.00**

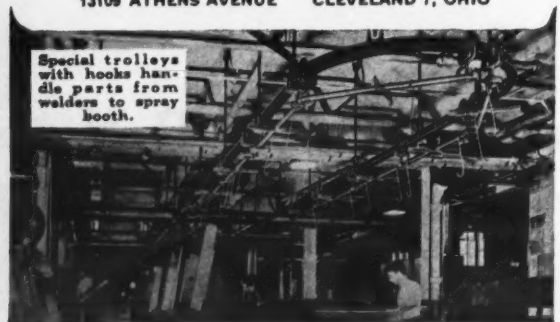
SYSTEM CARRIES PARTS FROM WELDERS THROUGH STORAGE, SPRAY AND OVENS TO WRAPPER

A well known furnace manufacturer has eliminated the bottle-neck in their enameling section with the use of infra-red drying and American MonoRail Overhead Handling System. Where casing sections would pile up in the spray booth, often requiring over 30 minutes—it now takes only 8½ minutes to bake the finishes.

American MonoRail synchronizes all pre-baking operations with baking time. The system extends from the sheet metal section through spraying, baking, wrapping and returns to fabricating and welding stations. A turntable in the track permits reversing of carriers holding the pieces so that operator may spray all sides without touching the sprayed surfaces.

Our engineers will gladly show you how your products can be carried at the lowest possible cost and the highest possible efficiency.

**THE AMERICAN MONORAIL CO.**  
13109 ATHENS AVENUE CLEVELAND 7, OHIO



When inquiring specify CP A1306 — see information request blank, pgs. 2-3

## PRODUCTION

### New Ethanolamine — of Value in Synthesis of Compounds Used as Pharmaceuticals, Dyestuffs

Technical information is now issued on Dimethylethanolamine, — a water white, hygroscopic liquid with amine-like odor, completely miscible with water, alcohol and benzene. It undergoes reactions typical of a tertiary amine, forming light colored esters with high molecular weight organic acids. It is of value in the synthesis of compounds used as pharmaceuticals, corrosion inhibitors, acetate rayon dyestuffs, and textile auxiliaries and lubricants.

CARBIDE & CARBON CHEMICALS CORP., Dept. CP, 30 E. 42nd St., New York 17, N. Y.

When inquiring specify CP A1307 — see information request blank, pgs. 2-3

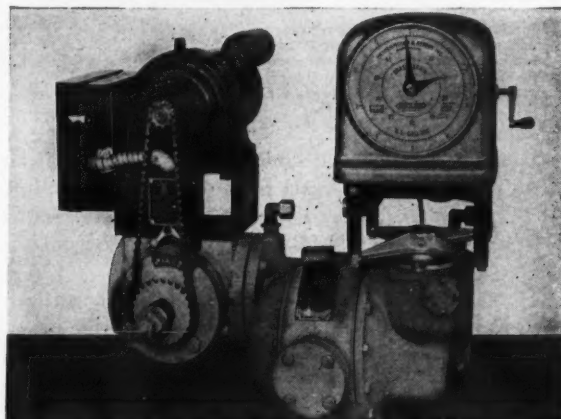
### Data on Flavor Control, Processing Fruit Juices And Filling of Food Products

New edition of house organ of manufacturer of food processing equipment features a number of informative, illustrated articles on the processing and filling of dairy and other food products as well as plant experiences with new methods. Of particular interest is an article on flavor control by a widely recognized authority. Another contains recent data on processing fruit juices and additional subjects include "Whole Milk Powder," "Short-Time Pasteurization," "Straight-Line Cooling," and other specialized material. Now presented under the title of "Food" this publication was formerly known as "Milk."

MOJONNIER BROS., Dept. CP, 4601 W. Ohio St., Chicago 44, Ill.

When inquiring specify CP A1308 — see information request blank, pgs. 2-3

## THE FLUIDOMETER



### FOR BATCHING LIQUIDS ACCURATELY

The Fluidometer system is a simple, dependable, completely non-manual metering system for batching light or heavy liquids. The precisely calibrated mechanism automatically delivers the predetermined quantity—then automatically resets for the next delivery. Adaptable to either hot or cold materials. Accuracy proved in laboratory tests and in actual operation. Write for descriptive literature.

HETHERINGTON & BERNER INC.  
711 Kentucky Avenue, Indianapolis 7, Indiana

**Hetherington & Berner**

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$$BB_2 + EP = \frac{LT}{V/P}$$

## FORMULA FOR PERFECT flexibility

Specify CHIKSAN Ball-Bearing Swivel Joints and you specify the only joint built to the formula for perfect flexibility:

**BB<sub>2</sub>** = Double rows of ball bearings.

**EP** = Effective Packing Element — self-adjusting for:

**V/P** = Pressure or Vacuum Service

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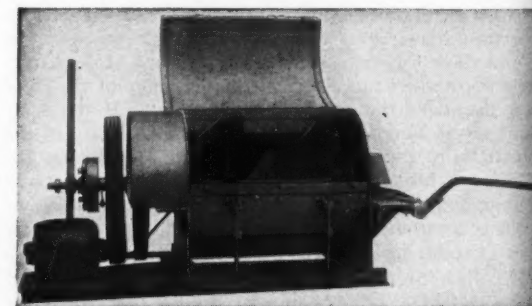
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DISTRIBUTED NATIONALLY BY CRANE CO.

**CHIKSAN TOOL COMPANY**  
Ball Bearing SWIVEL JOINTS for ALL PURPOSES  
BREA, CALIFORNIA

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## 5 Reasons Why the Multi-Mixer Has more advantages

1. A better mix in less time
  2. Multi special arranged paddles
  3. All material in action
  4. Well built and dust-proof
  5. Fully equipped with SKF bearings
- Built in sizes 3 to 60 cu. ft. Motor drive or geared head motor drive or tailor made to fill your requirements. Write for full information.

**The Multiplex Concrete Machinery Co.**  
Elmore, Ohio

When inquiring specify CP A1311 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



# ★ DIRECTORY ★ of products in this issue

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## WaterFOG



## Shields The Heart Of A War-Working Community

### ROCKWOOD WaterFOG TAKES THE FURY OUT OF OIL FIRES

Now water . . . cheap, plentiful . . . becomes your surest means of protecting against fires in flammable liquids — whether in transformers or open tanks.

WaterFOG is safe to use on such fires . . . and completely effective. Its tiny water particles are so highly heat-absorptive (in direct proportion to their fineness) that the fire is rapidly cooled and confined. No splashing and spreading the blaze. No excessive water damage. No danger of water being exhausted.

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ways . . . by quenching the flames, by retarding vaporization, by shutting off oxygen . . . gives you complete protection at lowest cost. And — what is very important — it cools surrounding structures to guard against "flash-back"

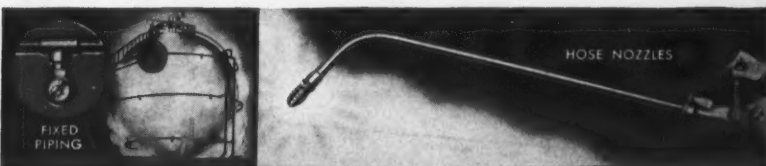
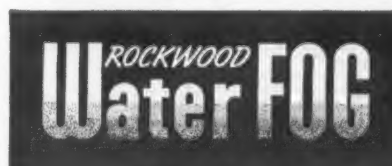
Rockwood WaterFOG is created by impinging streams of water at scientifically-determined angles — correctly engineered for particle size, fog pattern, and velocity. Rockwood-engineered fixed installations approved by Underwriters' Laboratories and Associated Factory Mutuals.

Nozzles and applicators for fire hose lines also available. Colored movies (16 mm.) showing tests of Rockwood WaterFOG are available to business executives. Write for Bulletin 123.

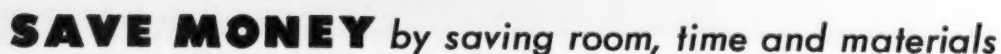
**ROCKWOOD SPRINKLER COMPANY**  
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**TYPICAL WaterFOG APPLICATIONS ARE:**  
driers, degreasing machines, coating machines, churn rooms, mixing and boiling kettles, spreaders, reactors, etc.

*Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires*



When inquiring specify CP A1312 . . . see information request blank, pgs. 2-3



One concern, faced with the problem of extracting oils from wax, replaced bulky equipment formerly used with AT&M Centrifugals, saving not only space, but time and money. For this application, AT&M engineers developed special baskets and a spray flotation device.

**Consider AT&M for** —  
capable engineering service (as war needs permit) —  
no charge for study and recommendation. Centrifuge  
gals and baskets in all machinable metals and coat-  
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**York, N. Y.**

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# A.T. *and* M.

## CENTRIFUGING

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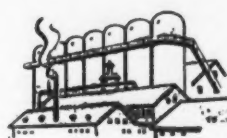
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CLUTCHES — BRAKES — MAGNETS

When inquiring specify CP A1315 — see information request blank, pgs. 2-3



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When inquiring specify CP A1316 — see information request blank, pgs. 2-3

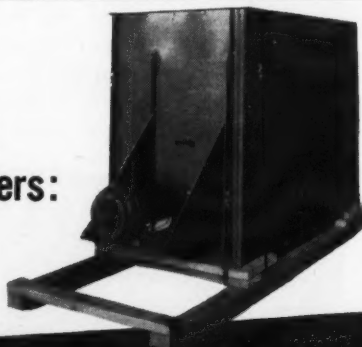
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To All  
Manufacturers:



IF UTMOST ECONOMY IS TO BE REALIZED, PROPER MATERIAL HAND-  
LING MUST BE PLANNED AND DEVELOPED AS AN INTEGRATED  
PART OF PRODUCTION. AND THIS IS WHERE THE SIGNODE  
SYSTEM OF STEEL STRAPPING WILL HELP YOU.

The priceless ingredient of every Signode Strapping application is the  
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**SIGNODE** STEEL STRAPPING COMPANY

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## HIGH Production UNIT

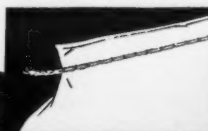
### UNION SPECIAL CLASS 20500

#### Heavy Duty Bag Closers

A good investment for any plant where  
100 lb. and larger filled cotton, jute or  
paper bags are closed. An adjustable  
sewing head mounting accommodates  
different sizes of bags. Unit has power  
driven, horizontal conveyor, inclined  
conveyor, or both; or conveyor trans-  
mission only, for plant production line.  
Three control systems available, in-  
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or drive and sewing head. Write for  
Union Special Bulletin No. 200, de-  
scribing the complete line of Union  
Special bag closers, sewing heads, stitch  
types, methods of closure, variety of  
installations and other useful informa-  
tion.

**Union Special Machine Company**

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**Union Special**  
BAG CLOSING MACHINES

When inquiring specify CP A1318 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## DO YOU HAVE A NEW SOLUTION?

Has a recent use of your equipment solved a difficult chemical process plant problem? The equipment may be new or from our standard line. For publication, data should state definitely (1) Nature of operation in question, i.e., cooking, cooling, mixing; (2) Difficulties involved such as control of temperature, product uniformity, lubrication or cleaning; (3) How was equipment used — in standard or modified form? (4) Results, facts on savings in time, labor, increased production or similar cost factors or extent of product improvement. Address the Editors.

### CHEMICAL PREVIEW

7 N. Michigan, Chicago 11, Ill.  
(over)

## DO YOU HAVE NEW PRODUCTS

improved product, either plant or laboratory equipment . . . or a new improved material . . . of specific interest to the chemical process field? If you will submit detailed information including uses, specifications, performance, distinctive features, nature of accompanying photos, drawings or size cut available, our Editors will consider it carefully for presentation to the 25,000 readers of this publication. There is no obligation. Write the Editor.

**CHEMICAL PREVIEW**  
737 N. Michigan, Chicago 11, Ill.



## "That's Interesting"

### Factory of the Future

Continued employment of women in almost all branches of industry on a large scale is evidenced in the recent research study of a major production and engineering organization, in which many innovations in the forecast factory of the future are described. Nurseries, play centers and shopping centers will be included in the new plants. Soundproofing, smoke eliminators and new lighting techniques are other features. (The Factory of the Future — H. K. Ferguson Co., Cleveland, Ohio.)

### Survey Shows Earning Power of College Graduates

A survey of U. S. College graduates (Dean's Study) reveals the relative life time earning capacity of college graduates, high school graduates and those with less formal training. Each 100 college graduates at the age of twenty-seven-five percent held executive positions, seventeen percent in-between jobs and but one percent were engaged in ordinary work. Average earnings at age 60 averaged \$144,000 for college graduates, \$88,000 for high school graduates and \$64,000 for those with less than high school or equivalent training.

### A Honey of A Knife

Electrically heated knife aids in the business of extracting honey. It is used to unclog the honeycomb on each tray. The honeycomb is placed in a drum and the honey extracted leaving the comb undamaged so the bees can use it.

### Horses but More Horsepower

After the first World War an infantry division was equipped with 4,400 horses and 153 motor vehicles. Today's infantry division requires 3,500 vehicles of 160 different types and no horses.

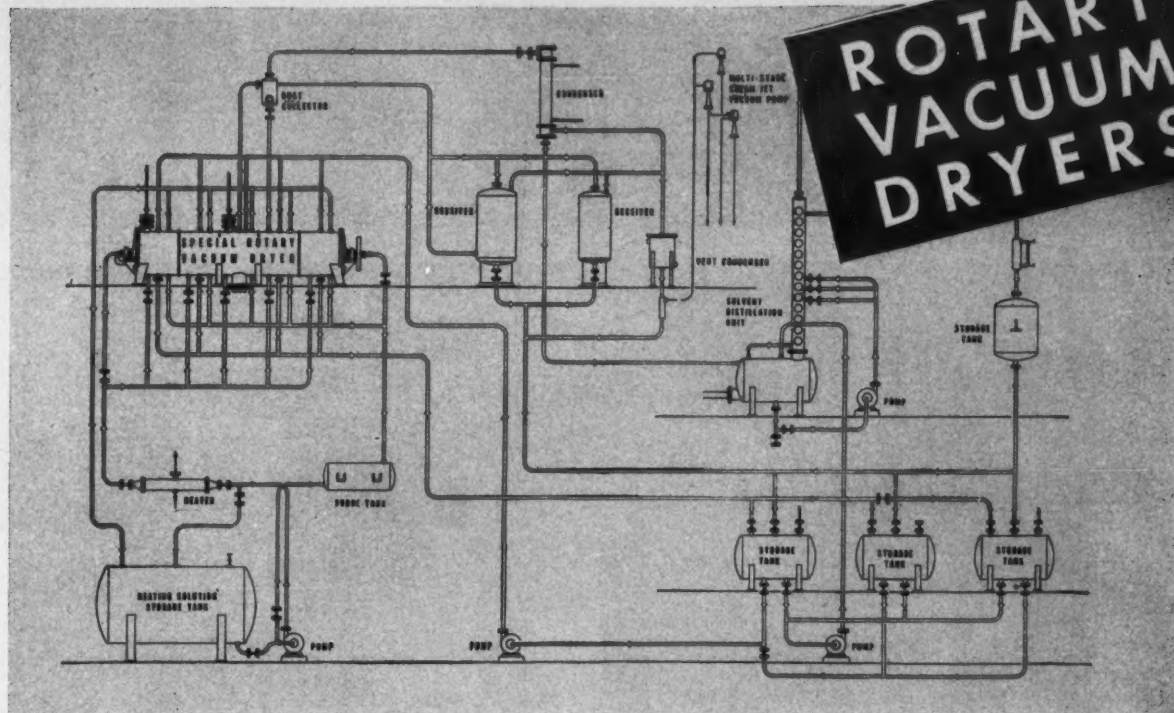
### Machine Wraps 11 Different Sizes of Biscuit Cartons

An automatic wrapping machine that will wrap 11 different sizes of biscuit cracker cartons has recently been put into operation at a Louisville, Ky. plant. This improved model of a standard machine is quickly adjustable for any size from those 14 inches long, 8 inches wide and seven inches deep to the smallest — 5 inches length, 1½ inches width and ½ inch deep. Improvements include an automatic cut-out electric eye for accurate registration of the wrapper. The machine will wrap cartons in cellophane or wax at the rate of 30-70 per minute.

### Bumper Citrus Crop

Indications of a record production of citrus fruit during the 1944-45 season, substantially more of this commodity in fresh and processed form than was allocated last year is expected to be available to United States civilians next year. WFA states in announcing allocations for period July 1, 1944 — June 30, 1945. Total allocable supplies are about 15.3 million pounds (farm weight) of which civilians receive slightly more than 83% or about 12.7 million pounds more than in 1943-44.

For more information on product at right, specify CP A922 . . . see information request blank between pages 2-3.



The plant indicated on the flow sheet involves the extraction and subsequent drying of an organic material at low temperature, and also includes recovery equipment to make the extracting solvent suitable for reuse. This complete unit was designed and constructed by Blaw-Knox.

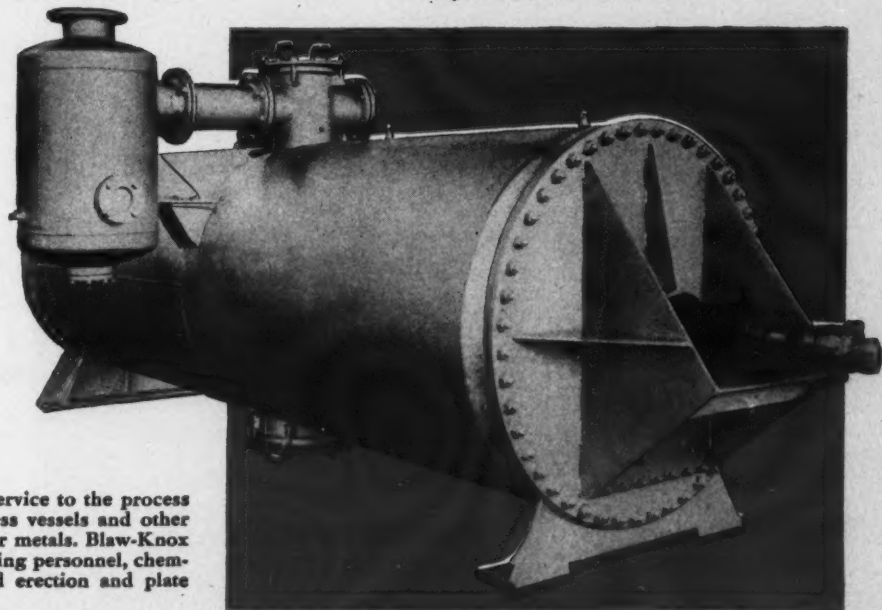
The problems involved in these operations are well-known to Blaw-Knox engineers and technicians, who

have at their disposal the data and facilities necessary to see the job through from idea to operation . . . Your inquiry will receive prompt, intelligent attention.

## BLAW-KNOX DIVISION

### OF BLAW-KNOX COMPANY

2076 Farmers Bank Building, Pittsburgh, Pa.  
NEW YORK CHICAGO PHILADELPHIA BIRMINGHAM WASHINGTON  
Representatives in Principal Cities



Blaw-Knox furnishes a complete service to the process industries, including welded process vessels and other equipment of steel, alloys and other metals. Blaw-Knox facilities include complete engineering personnel, chemical engineering laboratories—field erection and plate fabrication of every description.

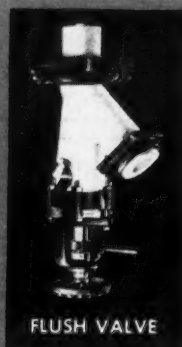
# BLAW-KNOX

## PROCESS EQUIPMENT

# Processing Corrosive Chemicals?

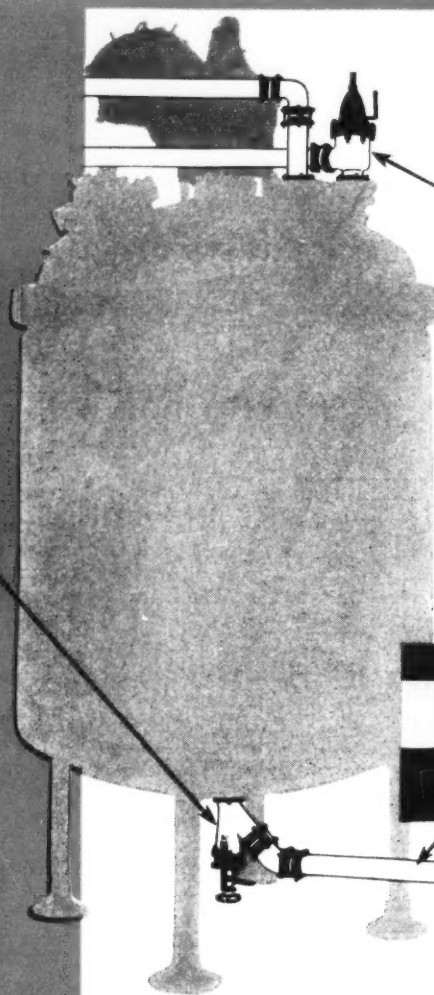
**HERE'S HOW  
LAPP PORCELAIN  
CAN IMPROVE  
PURITY,  
INCREASE  
SECURITY  
AND REDUCE  
COSTS**

• If your processing system includes modern glass-lined rubber-lined, lead-lined or tile processing tanks, you have installed this equipment because of the corrosive action of chemicals handled, or because of the need for purity. If you are experiencing trouble with valves or piping, or if there is unexplained trouble which might be attributable to valves, pipe or gaskets, you may need the special properties of Lapp Chemical Porcelain. This rugged, dense, non-porous body defies attack from any acid (except HF), is smooth, easily cleaned, and gives long, low-cost service. Lapp Insulator Co., Inc., Chemical Porcelain Div., LeRoy, N. Y.



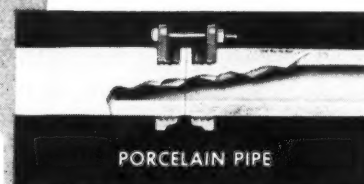
FLUSH VALVE

• Standard attachment to tank outlets. Poppet lines up with tank bottom, eliminating pocket at outlet.



SAFETY VALVE

• Pop-type valve. All-porcelain construction avoids contamination from contact of corrosive gases or liquids with metals or gaskets. Blow-off adjustable.



PORCELAIN PIPE

• Strong uniform-section pipe, glazed inside and out. Precision grinding of pipe ends permits recommended use with thin hard gaskets, or where necessary, with no gaskets at all. Smooth, glazed surface, inside and out, permits easy cleaning, promotes purity.



# Lapp

*Chemical Porcelain*